

# Preliminary Environmental Assessment

## Northeast Fergus Watershed Area Plan

EA # MT060-08-057

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Lewistown Field Office





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# Chapter 1

## Introduction

This environmental assessment (EA) analyzes the effects of canceling the current grazing permits and issuing new grazing permits for up to 10 years within the Northeast Fergus Watershed Area. The new grazing permits will be in compliance with the National Environmental Policy Act (NEPA) and will ensure that the grazing allotments are meeting or making significant progress towards meeting the standards for rangeland health (Appendix A).

The EA defines the issues, details the alternatives considered, describes the biological and physical characteristics of the affected environment, and explains the environmental consequences of each alternative.

The information in this chapter is organized into the following headings:

- 1.0 Purpose and Need
  - 1.1 Background
  - 1.2 Location
  - 1.3 Decision Needed
  - 1.4 Direction from and Conformance with Land Use Plans
  - 1.5 Issues and Objectives Specific to the Northeast Fergus Watershed Area
  - 1.6 Issue Objectives Summary

### 1.0 Purpose and Need for Action

The Bureau of Land Management (BLM) is required to complete an environmental analysis when renewing 10-year grazing permits. This analysis will also review the allotments in the Northeast Fergus Watershed Area for compliance with the standards for rangeland health (Appendix A), and analyzes effects associated with renewing the grazing permits. The purpose is to renew grazing permits that are in compliance with NEPA and to modify, if necessary, current grazing practices on some allotments so that progress can be made toward meeting the rangeland health standards. The need is to address expiring grazing permits and current management as it relates to resource conditions on some allotments where rangeland health standards are not being met due to current livestock management practices and based on current assessments and monitoring data.

### 1.1 Background

The Bureau of Land Management (BLM), Lewistown Field Office (LFO) has undertaken a field office-wide planning effort, focused on implementing livestock

grazing decisions on grazing allotments in the Judith-Valley-Phillips Resource Management Plan (JVP RMP), approved in September 1994 (BLM 1994).

This includes fully analyzing the effects of livestock grazing in compliance with the National Environmental Policy Act (NEPA) and ensuring that the Standards for Rangeland Health, 43 CFR 4180, are being met or significant progress towards meeting the standards is being made on all grazing allotments.

The LFO administers about 1 million acres of public land in nine central Montana counties; an area approximately 225 miles long by 150 miles wide. The vastness of this jurisdictional area, combined with direction from the JVP RMP, has prompted the LFO to delineate smaller, manageable planning areas based on watersheds.

### 1.2 Location

The Northeast Fergus Watershed Area is located in Fergus County, Montana. It encompasses an area east of US Highway 191 and south of Fred Robinson Bridge to the Petroleum County line and then east to the Petroleum County line. A portion of the western boundary extends approximately four miles west of Bohemian Corner and stays north of US Highway 191. The watershed area includes most of the Sacagawea River (Crooked Creek) watershed and portions of these watersheds: Antelope Creek, Blood Creek, Sand Creek and Sage Creek (Map M1).

The watershed area contains approximately 308,622 acres, including 59,418 acres of land administered by the BLM (public land), 20,296 acres of State land, 27,476 acres administered by the U.S. Fish and Wildlife Service and 199,984 acres of private land. A total of 34 BLM grazing allotments are permitted to 29 permittees (Maps M1 and M2).

### 1.3 Decision Needed

The LFO manager is the responsible official who must decide whether to implement management actions proposed in the preferred alternative. These decisions would include:

- Renewing grazing permits based on determinations of rangeland health standards and livestock grazing guidelines.
- Initiating and sustaining cooperative noxious weed control efforts.

## 1.4 Direction From and Conformance With Land Use Plans

The JVP RMP set forth the land use decisions and conditions guiding management of public land and minerals within the Northeast Fergus Watershed Area. All uses and activities within the watershed area must conform to the decisions and terms and conditions described in this plan. Appendix B describes the land use plan guidance contained in the JVP RMP that is pertinent to the BLM land in this watershed area.

The JVP RMP specifies land use plan decisions and objectives to be implemented in the Northeast Fergus Watershed Area. It also specifies that implementation of riparian/wetland decisions will be conducted on a watershed basis and will consider management of streams, water sources and uplands. Management of livestock grazing will be in accordance with the grazing administration regulations found in 43 CFR Part 4100. Under the JVP RMP, livestock grazing will be managed through the development and monitoring of grazing or similar plans to maintain or improve ecological condition, enhance vegetation production, maintain and enhance wildlife habitat, and protect watersheds (page 12 of the approved plan).

The JVP RMP was amended by the Standards for Rangeland Health and Guidelines for Livestock Grazing Management Environmental Impact Statement (Standards and Guidelines), approved by the Secretary of the Interior in August 1997 (BLM 1997). Livestock grazing is managed under the Lewistown District (Lewistown and Malta Field Offices) Standards and Guidelines (Appendices A and C). Standards are statements of physical and biological condition or degree of function required for healthy sustainable rangelands and guidelines focus on establishing and maintaining proper functioning conditions through proper management actions. The application of guidelines is dependent on allotment management objectives, but must be conformed to as appropriate.

The JVP RMP was also amended by the Fire/Fuels Management Plan/Plan Amendment for Montana and the Dakotas (BLM 2003). The amendment included language to bring the JVP RMP up to date with the Federal Wildland Fire Management Policy.

## 1.5 Issues and Objectives Specific to the Northeast Fergus Watershed Area

### 1.5.1 Upland Health

Issue: The upland health standard is not being met for some of the upland areas on public lands. Current livestock grazing management is a significant factor in some cases.

Short-term objective: Maintain the 13 allotments that are meeting the upland standard, maintain or improve the current status of the 9 allotments that are not meeting the standards, but making significant progress or are not meeting the standard (not livestock caused), and take actions that would ensure significant progress is made toward meeting the standard on the 13 allotments that are not meeting the standard due to current livestock management. Also, enter into cooperative weed control agreements (or re-emphasize current cooperative agreements) with permittees where the upland and/or biodiversity standards for rangeland health are not being met due to noxious weed infestations.

Long-term objective: Maintain or improve upland areas so that all allotments are meeting the upland health standard or making significant progress within 10 years, where current livestock management is a significant factor affecting upland health.

### 1.5.2 Riparian Health

Issue: Lewistown Standard 2 (Riparian and wetland areas are in proper functioning condition) is not being met for some of the riparian areas on public lands. Current livestock management is a significant factor in some cases.

Goal: The BLM's goal is to improve and maintain riparian health on Crooked Creek, Antelope Creek, Carroll Coulee, Carter Coulee, and Sand Creek to proper functioning condition (PFC) or above. It is also to ensure the establishment and recruitment of willow and other desirable woody species on sites capable of supporting such species on Crooked Creek.

Objective: Maintain or improve the 19.25 miles of riparian areas to Proper Functioning Condition (PFC) or above within 10 years.

### 1.5.3 Water Quality

Issue: No streams listed as water quality impaired by the State of Montana are located within the watershed area. However, areas of degraded upland and riparian range condition could be affecting water quality by delivering pollutants such as fecal coliform, nitrates, and sediment to streams.

Short-term objective: Address water quality concerns by improving trends on the 13 allotments with upland grazing related issues and 4 allotments with riparian grazing related issues.

Long-term objective: Maintain or improve rangeland health so that all allotments within the watershed area meet upland and riparian health standards.

## 1.5.4 Biodiversity

Issue: The biodiversity health standard is not being met on some allotments. Livestock are a significant factor in some cases.

Short-term objective: Maintain the 15 allotments that are meeting the biodiversity standard, maintain or improve the 7 allotments that are making significant progress towards meeting the standard or are not meeting the biodiversity standard (not livestock caused), and take actions that would ensure significant progress is made toward meeting the standard on the 11 allotments that are not meeting the standard due to current livestock management.

Long-term objective: Maintain or improve rangeland health so that all allotments are meeting the biodiversity standard or making significant progress within 10 years, where current livestock management is a significant factor affecting biodiversity.

Issue: Residual understory vegetation is not adequate to meet the needs of nesting upland game bird (sage-grouse) habitat in some allotments.

Objective: Maintain and/or enhance known upland game (sage-grouse) bird habitat.

## 1.5.5 Noxious Weeds

Issue: Noxious weed populations are present on public, private, and state lands within the watershed area.

Objective: Continue control of known noxious weed infestations and all newly identified infestations. Initiate new cooperative weed control agreements with grazing permittees within the watershed area and re-emphasize current agreements. Eradicate any new populations of category 3 weeds (See Appendix D for a description of weed categories).

## 1.6 Issue Objectives Summary

Table 1.1 summarizes the issue objectives for Alternatives 1 and 2, which are described in Chapter 2.

<b>Table 1.1</b> <b>Summary of Issue Objectives for Alternatives 1 and 2</b>		
<b><i>Issue</i></b>	<b><i>Alternative 1</i></b>	<b><i>Alternative 2</i></b>
Upland Health	13 allotments would not meet objectives due to livestock grazing.	All allotments would meet upland objectives.
Riparian Health	4 allotments would not meet objectives due to livestock grazing.	All allotments would meet riparian objectives.
Water Quality	All allotments would meet water quality objectives.	All allotments would meet water quality objectives.
Biodiversity	11 allotments would not meet objectives due to livestock grazing.	All allotments would meet biodiversity objectives.
Noxious Weeds	The weed objective would be minimally met.	The weed objective would be met.





## Chapter 2

### Alternatives

#### 2.0 Alternatives, Including the Proposed Action

Two alternatives, including the proposed action were developed to address the issues outlined in Chapter 1.

The information in this chapter is organized into the following headings:

- 2.1 No Action - Continuation of Current Management
  - 2.1.1 Rangeland Administration
  - 2.1.2 Noxious Weeds
- 2.2 Proposed Action
  - 2.2.1 Rangeland Administration
  - 2.2.2 Noxious Weeds
  - 2.2.3 Standards and Guidelines for Rangeland Health
  - 2.2.4 Range Improvement Projects Existing and Proposed
  - 2.2.5 Black-Tailed Prairie Dogs
  - 2.2.6 Sage-Grouse
  - 2.2.7 Fish Habitat Implementation
  - 2.2.8 Adaptive Management

The National Environmental Policy Act (NEPA) and Bureau of Land Management (BLM) policy require preparation of an environmental assessment (EA) as an integral component of livestock grazing permit issuance or renewal. At a minimum, the EA must address the following:

- Issuing a new permit with the same terms and conditions as the expiring permit (no action).
- Issuing a new permit in compliance with the National Environmental Policy Act (NEPA) and based on Standards and Guidelines for rangeland health (proposed action).

All alternatives would be required to comply with applicable BLM laws, rules, regulations, and policy.

#### 2.1 Continuation of Current Management – No Action

##### 2.1.1 Rangeland Administration

The No Action Alternative would renew the grazing permits within the watershed area with the same terms and conditions as the current permits. No changes would be made and range improvement projects would

not be proposed or constructed. Cooperative weed control would not be made a condition of the grazing permit.

Livestock grazing would remain consistent with the current permit and no new range improvement projects would be constructed to protect/enhance upland, riparian, biodiversity or water resource values. If allotments are currently not meeting standards and guidelines, this alternative would provide no measures for corrective actions and those allotments would not be in compliance with current BLM grazing regulations 43 CFR 4180. Issue objectives would not be met with this alternative.

##### 2.1.2 Noxious Weeds

The BLM would continue current weed control efforts within the watershed area, including chemical, biological and mechanical methods.

The BLM would continue to develop cooperative agreements with livestock grazing permittees for noxious weed control on upland weed infestations. Under these agreements, the BLM agrees to provide the proper type and amount of herbicide and the permittee agrees to apply the herbicide to infested areas on BLM lands. Application may be made by a properly licensed permittee or may be contracted to a licensed applicator at the permittee's cost.

Biological control efforts would continue through release and dissemination of newly available and established biocontrol agents. Cooperative weed control agreements would be independent of the terms and conditions of renewed grazing permits. The issue objectives for weeds would be minimally met under this alternative.

#### 2.2 Proposed Action

##### 2.2.1 Rangeland Administration

The proposed action proposes changes to better manage desirable vegetation, water, soils, wildlife habitat and noxious weeds. Management changes for those allotments not meeting standards and guidelines for rangeland health are included in the proposed action listed under each grazing allotment in section 2.2.3. In some instances changes in the management of allotments that are meeting the standards for rangeland health are being proposed. These changes in management address administrative efficiencies,

permittee requested changes and other administrative reasons as needed.

Current grazing permits would be cancelled and new 10 year grazing permits would be offered with Standards and Guidelines for Rangeland Health (Appendices B and C) and cooperative weed control agreements incorporated into the terms and conditions of the permit. In addition, allotment specific terms and conditions may be added to individual permits as identified in Section 2.2.3.

Unless a more specific term and condition is proposed under Section 2.2.3, the following term and condition would be incorporated into permits designated as custodial:

*Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).*

Pending and future transfers of grazing preference will be approved where management actions, including terms and conditions, continue to meet the objectives described in this chapter.

## **2.2.2 Noxious Weeds**

The BLM will incorporate cooperative weed control agreements into the terms and conditions of every grazing permit associated with the watershed plan. The following term and condition will be added to address existing and future noxious weed infestations:

*Cooperative agreements between BLM and the permittee(s) will be established for control of existing or new infestations of noxious weeds found in the allotment(s) during the term of the permit in accordance with the Northeast Fergus Watershed Area Plan.*

Noxious weeds have been identified on uplands and in riparian areas within the watershed area. Continued inventory and monitoring would provide weed infestation trend data. Under cooperative agreements, the BLM would provide the proper type and amount of herbicide to treat infested areas on BLM lands. Application would be made by a properly licensed permittee or contracted to a licensed applicator at the permittee's cost.

Cooperative weed control agreements could be initiated any time during the tenure of a permit if weeds are

identified on an allotment. Permit terms and conditions would be modified to reflect the identification of noxious weeds and implementation of a cooperative weed control agreement.

Noxious weed inventory and monitoring within the watershed area would be a continual, dynamic workload accomplished by permanent and seasonal BLM employees, private landowners and cooperating agency personnel. Inventory and monitoring data would be compiled by the LFO weed specialist and used to analyze the effectiveness of weed control efforts, project infestation trend patterns and provide guidance for future weed control planning and implementation.

The chemical component of the integrated weed control program would be closely monitored by the LFO weed specialist. All herbicide applications would utilize BLM approved herbicides (BLM annually revises an approved herbicide formulation list) and be applied by experienced, licensed applicators; all applications would comply with label restrictions and guidelines. In riparian areas, extreme caution would be taken to avoid damage to desirable vegetation, especially woody species. Herbicide applications within a riparian zone or within 100 feet of any body of water would be limited to hand spot spraying. Site specific exceptions could be granted if woody or desirable forb species are absent within a riparian zone.

Biological control efforts would continue through release, dissemination and monitoring of newly available and established biocontrol agents. The BLM would continue a cooperative relationship with the Agricultural Research Service (ARS) by providing suitable experimental and research sites and assisting with associated biocontrol projects. Biological control would continue to be a valuable tool for control of Category 1 weeds (effective biocontrol of Russian knapweed and whitetop is being researched, but not available at the time this document was published).

Noxious weed control measures would apply to all wildland fire areas. Post-burn inventories and assessments would indicate if weed treatment is needed. During the livestock grazing rest period the BLM would continue weed treatment as necessary. After any livestock grazing rest period, the BLM would work with permittees in accordance with the cooperative weed control agreements discussed above.

## **2.2.3 Standards and Guidelines for Rangeland Health**

Standards for Rangeland Health developed in consultation with the Central Montana Resource Advisory Council (RAC) (Appendix A) state that rangelands should be meeting or making significant and

measurable progress toward meeting the upland, riparian, water quality, air and biodiversity standards for rangeland health. Significant progress toward meeting standards for rangeland health would be accomplished and guidelines followed through a variety of management techniques. Management on allotments that are not meeting standards would be modified to improve resource conditions and meet standards. Rangeland conditions which do not meet standards could be improved with changes to allotment management, including, but not limited to:

- increasing length of rest periods between grazing periods
- changing season of use
- altering livestock turnout location
- changing grazing intensity
- changing grazing duration
- improving livestock distribution

Improved livestock distribution could be achieved through construction of water developments and fences, selective salt and/or mineral placement, and changes to livestock turnout location and season of use. In some cases exclosure fencing could be used to protect upland and/or riparian areas. Specific details are listed by allotment below.

Guidelines for livestock grazing management developed in consultation with the Central Montana RAC with input from the public (Appendix C) will be implemented on all of the grazing allotments that will be authorized to graze under this plan. Upland objectives were developed for individual allotments on a case by case basis, based on vegetation production and ground cover objectives consistent with the site potential by soil series or ecological site. Under the proposed action, stubble height or percent utilization limits of key upland grass species would be applied as a monitoring tool to ensure upland objectives and guidelines for livestock grazing management are met. The stubble height or utilization limit is based on studies that demonstrate greater vigor of grasses grazed at moderated levels (Heady 1950, Troxel and White 1989, Vallentine 1990, Van Pollen 1997). The most common key forage species for the eastern portion of Fergus County are: bluebunch wheatgrass (*Agropyron spicatum*), green needlegrass (*Stipa viridula*), and western wheatgrass (*Agropyron smithii*). The forage utilization limit of key upland grass species would be limited to 4 inches (6 inch stubble height for bluebunch wheatgrass) or 50% at the end of the grazing season. Appropriate and timely action would be taken if the stubble height or percent utilization measurements indicate that grazing management is not achieving the desired upland utilization objectives.

Although it is understood that riparian stubble height and woody species utilization does not fill the role of a

long-term management objective, they can be used as a direct and indirect guide for current grazing impacts to riparian areas (Clary and Leininger 2000). Stubble height and woody species utilization will be used as indicators of the current year's grazing impacts.

Utilization of key, palatable, woody species such as *Salix* spp. (willows) and *Populus* spp. (cottonwoods) would be limited to light-to-moderate browsing as described in "Browse Evaluation By Analysis of Growth Form, Volume 1, Methods for Evaluating Condition and Trend" (Keigley and Frisina 1998).

Utilization of key riparian grasses would be limited to an average 4 inch stubble height.

A monitoring strategy for each reach would be developed based upon the inventory data. The LFO would monitor the soil, hydrology, or vegetation attribute which caused the reach to be at risk or nonfunctional (the NO's on the Proper Functioning Condition checklist). For example, if it was a vegetation attribute such as large percentages of bare ground or disturbance related plant species (i.e. Kentucky Bluegrass or Foxtail Barley), the monitoring strategy would be greenline composition and successional status found in Winward (2000). If a soil or hydrology attribute such as streambank alteration or lack of root mass protection is the cause of degradation, the monitoring strategy would be greenline stability rating and percent streambank alteration.

The utilization of preferred woody species and key riparian grasses and streambank alteration measurements are not objectives, but rather they are indicators of impending resource damage and triggers for movement of livestock. If intense browse levels are noted on preferred woody species or the 4 inch stubble height requirement is met, it is time for livestock to be moved. The browse level on preferred woody species needs to be looked at where there are enough plants to conduct a browse survey. Widely spaced, individual plants are not appropriate.

Failure to meet the stubble height requirement or intense browsing would prompt an assessment of resource condition and indicate the need to make appropriate management changes.

Requirements for resting areas from livestock grazing following fire would depend on a variety of factors including resource objectives, the type of fuel, time of burn, accessibility of the burned area to livestock, and post-burn climatic factors. Typically, a two growing season rest period would be required following a wildfire.

No streams within the watershed area are listed as water quality impaired by Montana Department of

Environmental Quality (MDEQ). However, areas of degraded upland and riparian range condition could be affecting water quality by delivering pollutants such as fecal coliform, nitrates, and sediment to streams. The BLM will use reasonable land, soil and water conservation practices to prevent harm to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.

Air quality in the Northeast Fergus Watershed Area is generally considered good to excellent; the air quality standard is being met on all allotments.

The biodiversity standard is being met on the majority of allotments within the watershed area. Primary causes for the biodiversity standard not being met are non-native vegetative species and the lack of residual herbaceous cover due to livestock grazing. Management actions are proposed on allotments not meeting the biodiversity standard due to livestock grazing; proposed actions would lead to significant progress toward meeting the standard. Actions are also proposed on some allotments not meeting the biodiversity standard where livestock grazing is not the primary cause; examples would be crested wheatgrass management and improved weed management practices.

Appendices G, H, I and J describe the current status of the allotments and permits in the watershed area. Map M1 shows the location of the grazing allotments and Map M3 shows the location of proposed range improvement projects.

Under the proposed action, the following actions would be implemented to insure allotments meet the standards for rangeland health or make significant progress toward meeting the standards.

#### **Northeast Fergus Watershed Area Grazing Allotments:**

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ID # - 01

West Crooked Creek, Allotment 15128

Public acres – 440

AUMs - 103

Public land – 51%

Livestock No. – 134 cattle

Season of Use – 09/16-10/31

Grazing System – Grazing in accordance with existing Allotment Management Plan (AMP)

Type Use – Active

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in late seral stage.
- Maintain upland range health.

Meeting Riparian Health Standard:

- Not meeting, but making significant progress

Riparian Objectives:

- Improve the 1.5 miles of Antelope Creek to proper functioning condition or above.
- Continue to support adequate streambank vegetation of spike sedge and prairie cord grass.

Meeting Water Quality Standard:

- Yes

Water Quality Objectives:

- Improve the 1.5 miles of Antelope Creek to proper functioning condition or above.
- Continue to support adequate stream bank vegetation of spike sedge and prairie cord grass.

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment.

Conforms to Guidelines for Livestock Grazing

Management: Yes

Proposed Action: The current permitted use would be modified with additional terms and conditions; 134 cattle, 103 AUMs, season of use; 09/16-10/31, 51% active.

Total preference would remain 103 AUMs.

The following terms and conditions will be added to the grazing permit:

- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.
- Grazing will be in accordance with the West Crooked Creek Allotment Management Plan, approved September 25, 1980.

Range Improvements: No range improvements are proposed.

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ID # - 02

Chimney Crossing – Allotment 12501

Public acres – 2,780

AUMs - 665

Public land – 100 & 48%

Livestock No. – 1 & 225 cattle

Season of Use – 3/1-2/28 & 05/01 – 10/30

Grazing System – AMP

Type Use – Custodial & Active

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in late seral stage.

Meeting Riparian Health Standard:

- Yes

Riparian Objectives:

- Maintain 1.3 miles of Crooked Creek in proper functioning condition or above.
- Eradicate the salt cedar found in the riparian area

Meeting Water Quality Standard:

- Yes

Water Quality Objectives:

- Maintain 1.3 miles of Crooked Creek in proper functioning condition or above.

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain residual herbaceous cover to support sage-grouse nesting.

Conforms to Guidelines for Livestock Grazing

Management: Yes

Proposed Action: The current permitted use would be modified. This allotment lies to the east of the East Antelope Allotment, 15101 (ID# 13) which is not meeting the standards for rangeland health. The same permittee is authorized to graze both allotments and proposes splitting this allotment into two pastures and grazing the west pasture in conjunction with the East Antelope Allotment. This allotment will be crossed fenced and the AUMs and associated lands within the west pasture will be reallocated to the East Antelope Allotment, 15101. The west pasture consists of approximately 1,744 acres of public domain land with 265 AUMs of grazing preference, 369 acres of deeded lands and 1,057 acres of Crooked Creek Cooperative State Grazing District owned lands. There are also 607 acres of public domain land and 223 AUMs of grazing preference within this pasture that have been historically available through exchange-of-use (EOU) agreements. The AUMs do not show up as preference because of the EOU. The east pasture consists of 2,080 acres of public domain land with 386 AUMs of grazing preference and 525 acres of Crooked Creek Cooperative State Grazing District owned lands and 320 acres of state lands. There are also 30 acres of public domain land and 6 AUMs of grazing preference within this pasture that have been historically made available through exchange-of-use (EOU) agreements. Grazing of the east pasture will be authorized as follows: East -

208 yearlings, 386 AUMs, season of use; 09/01-12/01, 61% active.

Bouman – 1 Cattle, 14 AUMs, season of use; 03/01-02/28, 100% custodial

Total preference would be 384 AUMs.

The following terms and conditions would be added to the grazing permit:

- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.
- Custodial grazing of the Bauman pasture is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: The BLM and permittee propose to split the allotment and allocate the west pasture to the East Antelope allotment, 15101. Approximately 2.5 miles of permanent 4 wire fence will be constructed. The bottom wire will be smooth and wire spacing of 16, 22, 28 and 40 inches from the ground up will be used. The fence will be built to Bureau specifications. The fence location is as follows:

- T. 20 N., R. 26E., Section 35; NWSWNE, SESWNE, NENWSE, W½SESE
- T. 19N., R. 26E., Section 2; NWNENE, E½NENE, E½SENE; Section 1; W ½ NWSW, line splitting the east and west halves of the SWSW Section 12; W½E ½NW

Contingent on available funding, the BLM will provide the material for this fence and the permittee will provide the labor to construct the fence.

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ID # - 03

East Indian Butte Common – Allotment 02001

Public acres – 46,010

AUMs – 5,456

This large common allotment has a total of 11 permittees, of which several have multiple authorizations with differing seasons of use, livestock numbers and percentages of public land. The following table describes the current authorizations.

Permittee	Pasture	Livestock	Season	% Public Land	AUMs
M	Cimrhakl Spg	71 C	5/1-6/15	11	12
M	Cimrhakl Spg	71 C	8/16-10/31	11	20
M		45C	5/16-11/1	89	224
L	Little Crooked	156 C	5/15-11/15	54	512
L		119 C	5/15-11/15	42	304
Kl		334 C	6/16-10/20	46	641
Kl		112 C	5/15-11/15	10	68
D		123 C	5/16-11/15	14	104
D	Road	25 C	5/15-12/15	79	140
D	Exchange of use	103 C	5/16/-11/15	100	623
WJ	Jeff's	65 C	4/16-6/15	10	13
WJ	Jeff's	30 C	8/15-10/31	10	8
WJ	Jeff's	121 C	11/1-11/30	10	12
WJ	Exchange of use	1 C	5/16-11/15	100	6
WJ		45 C	5/16-11/15	38	103
WR		88 C	5/16-11/15	66	351
N		56 C	6/1-10/30	38	106
N	Marcott Coulee	45 C	6/1-10/30	55	124
K		19 C	6/1-11/2	2	2
K	Exchange of use	18 C	6/1-11/2	100	92
WW		82 C	5/16-11/15	92	456
Do	Marcott Coulee	296 C	6/1-11/1	53	794

Meeting Upland Standard:

- No

Upland Objectives:

- Improve vegetation to late seral stage within the Cimrhakl Spring Pasture as it is not meeting the standard due to the current livestock grazing management.
- Improve vegetation to late seral stage within the Goat Pasture as it is not meeting the standard, not due to current livestock management.
- Maintain the vegetation in late seral stage within Jeff's, Road, Eastside, Little Crooked, Marcott Coulee North and Marcott Coulee South pastures as these pastures are currently meeting the standard.
- Consult with the permittees to develop and implement management actions to ensure uplands and biodiversity are meeting or making significant progress toward meeting rangeland health standards.

Meeting Riparian Health Standard:

- No

Riparian Objectives:

- Improve the riparian health within Carter Coulee to Proper Functioning Condition or above. .
- Maintain and improve the condition of riparian habitats associated with 2.5 miles of Sand Creek and 2 miles of Marcott Coulee to proper functioning condition or above.
- Consult with the permittee to develop and implement management actions to ensure riparian areas are meeting or making significant progress toward meeting rangeland health standards.

Meeting Water Quality Standard:

- Yes

Water Quality Objectives:

- See riparian objectives.

Meeting Biodiversity Standard:

- No

Biodiversity Objectives:

- Improve residual cover through increased amounts of residual cover from native bunchgrass species within the Cimrhakl Spring pasture to support sage-grouse nesting. This pasture is not meeting the standard.

- Maintain or improve residual herbaceous cover provided by native bunchgrasses to provide for sage-grouse nesting habitat within the remaining pastures.
- Consult with the permittee to develop and implement management actions to ensure riparian areas are meeting or making significant progress toward meeting rangeland health standards.

**Conforms to Guidelines for Livestock Grazing Management:**

- No, does not conform with guidelines 1, 2, 4, 5, 8, 10 & 13 (Appendix C). The proposed action will address guidelines 1, 2, 4, 5, 10 & 13 not being met as they relate to upland health issues and standard #1. Guideline #8 is not being met as salt and mineral tub(s) were located in close proximity to riparian or wetland habitat or a developed spring or stock water tank.

**Proposed Action:** The current permitted and exchange-of-use would continue for all of the permittees as described in the table above except Cimrhakl Spring pasture. Use in Cimrhakl Spring pasture would be permitted from 5/15 to 6/16 and 9/15 to 11/15. All AUMs could be used in the fall if no use was made in the spring grazing period.

The following terms and conditions would be added to all of the permits associated with this allotment:

- The allotment will be grazed in accordance with the East Indian Butte AMP Approved May 23, 1995.
- Grazing of the Marcott Coulee Pastures will be in accordance with the Marcott Coulee AMP Approved August 23, 1990.
- Permittees that graze in the East pasture drained by Carter Coulee are required to ride and push any livestock within the riparian habitat at least ½ mile away as needed to allow for occasional rest and recovery of the existing riparian resources.
- The salt/mineral tubs would be moved to upland sites away from all riparian habitats, coulee bottoms and all developed water sources including reservoirs, springs and water tanks.

**Range Improvements:** Construct a pipeline from the Marcott Coulee Well as described in the Marcott Coulee Allotment Management Plan (July 1990). The BLM would design the pipeline and provide the pipe for the portions on public land. The permittee or grazing district would provide the tanks and the remainder of the materials and construct the pipeline to

Bureau specifications. This would be approximately 12 miles of pipeline and 12 tanks that will hold a minimum of 1,000 gallons of water. The pipeline will be located as follows:

- T. 20 N., R. 25 E., Section 1; S½SE¼, Section 12; SE¼SE¼
- T. 20 N., R. 26 E., Section 5; SW¼, SE¼NW¼, Section 6; S½NE¼, Section 7; N½S½, SW¼NW¼, Section 8; S½N½, E½NW¼, Section 9; S½S½, Section 10; S½SW¼, N½SE¼, Section 11; S½N½, Section 12; S½NW¼, NE¼

The pipeline will be buried to a depth of 6 feet more or less and consist of either 1 ½ inch 160 PSI or Schedule 40 PVC (polyvinylchloride) pipe.

The construction of this pipeline will allow for the improved distribution of livestock within the Marcott Coulee pastures of this allotment and will allow for the more reliable implementation of the 4 pasture deferred rotation grazing system that is currently in place on the Marcott Coulee pastures of this allotment and the Mauland/Hanson Allotment, 02027.

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ID # - 04  
 Indian Butte, Allotment 02008  
 Public acres – 78  
 AUMs - 15  
 Public land – 100  
 Livestock No. – 1  
 Season of Use – 03/01- 02/28  
 Grazing System – None  
 Type Use – Custodial

**Meeting Upland Standard:**

- No

**Upland Objectives:**

- Consult with the permittee to develop and implement management actions to ensure uplands and biodiversity are meeting or making significant progress toward meeting rangeland health standards.

**Meeting Riparian Health Standard:**

- No riparian habitat on BLM land within this allotment.

**Riparian Objectives:**

- N/A

**Meeting Water Quality Standard:**

- N/A

**Water Quality Objectives:**

- N/A

**Meeting Biodiversity Standard:**

- No
- Biodiversity Objectives:
- Improve residual cover to support sage-grouse breeding and nesting habitats, and vegetation available for wild herbivores.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform with guidelines 1, 4, 5 and 10-12 (Appendix C). The allotment is not meeting the upland health and biodiversity standards due to lack of desired plant communities and reduced resource capabilities conformance to guidelines will be addressed in the proposed action as these guidelines deal with upland health issues.

Proposed Action: The current permitted use would continue; 1 cattle, 15 AUMs, season of use – 03/01-02/28, 100% custodial.

Total preference would remain 15 AUMs.

The following terms and conditions will be added to the grazing permit:

- The permittee will limit the use of this allotment only to times when the corrals located on adjacent state land are being used and as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180). Grazing use will not exceed the recognized carrying capacity of the public land.

Range Improvements: No range improvements are proposed.

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ID # - 05

Mauland/Hanson, Allotment 02027

Public acres – 1174

AUMs – Hanson; 128 Mauland; 52

Public land – Hanson; 97% Mauland; 64%

Livestock No. – Hanson; 26 cattle

Mauland; 16 cattle

Season of Use – Hanson & Mauland; 06/01 – 11/01

Grazing System – Included in pasture rotation with Marcott North and South pastures of East Indian Butte allotment.

Type Use – Active

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain native vegetation in current seral stage.

- Utilize crested wheatgrass to optimize native vegetation capability.

Meeting Riparian Health Standard:

- No riparian habitat on BLM land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment and provide adequate amounts of forage and cover for wildlife.

Conforms to Guidelines for Livestock Grazing Management:

Yes

Proposed Action: The current permitted use would continue; Hanson – 26 cattle, 128 AUMs, season of use - 06/1-11/01, 97% Active. Mauland – 16 cattle, 52 AUMs, season of use – 06/01-11/01, 64% Active.

Total preference would remain 180 AUMs.

Range Improvements: The BLM proposes to install a pipeline and two stocktanks. The pipeline will originate from the Marcott Coulee Well in the East Indian Butte Allotment and extend into the east portion of this allotment. The BLM would design the pipeline and provide the pipe for the portions on public land. The permittee or grazing district would provide the tanks (minimum 1,000 gallon) and the remainder of the materials and construct the pipeline. The pipeline will be approximately 1 mile in length and located in the SW¼SE¼ of section 6 of Township 20 N., Range 27 E., and the SE¼ of section 1 of Township T. 20 N., R. 26 E. The pipeline will be buried to a depth of 6 feet more or less and consist of either 1 ½ inch 160 PSI or Schedule 40 PVC (polyvinylchloride) pipe.

The construction of this pipeline will allow for the improved distribution of livestock within both pastures of this allotment and will allow for the more reliable implementation of the 4 pasture deferred rotation grazing system that is currently in place on this allotment and the Marcott Coulee pastures of the East Indian Butte Common Allotment, 02001.

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ID # - 06  
Heil, Allotment 02633  
Public acres – 800  
AUMs - 202  
Public land – 100%  
Livestock No. – 28 cattle and 1 cattle  
Season of Use – 03/01 – 05/31, 11/01 – 02/28, 03/01 – 02/28  
Grazing System – None  
Type Use – Active/Custodial

Meeting Upland Standard:

- No, but making significant progress towards meeting the standards.

Upland Objectives:

- Improve vegetation to late seral stage.
- Consult with the permittee to develop and implement management actions to ensure uplands and biodiversity continue to make significant progress towards meeting or are meeting rangeland health standards.

Meeting Riparian Health Standard:

- No, riparian habitat on BLM land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, but making significant progress towards meeting the standards.

Biodiversity Objectives:

- Consult with the permittee to develop and implement management actions to ensure uplands and biodiversity continue to make significant progress towards meeting or are meeting rangeland health standards.

Conforms to Guidelines for Livestock Grazing Management:

No, does not conform with guidelines 1, 4, 5, 10 & 12 (Appendix C). The allotment is not meeting the upland health and biodiversity standards due to lack of desired plant communities and reduced resource capabilities conformance to guidelines will be addressed in the proposed action as these guidelines deal with upland health issues.

Proposed Action: The current permitted use would be modified; Pasture A - 87 cattle, 194 AUMs, season of use - 04/25-07/01, 100% active.

Pasture B – 1 cattle, 6 AUMs, season of use – 03/01-02/28, 100% custodial

Total preference would remain 202 AUMs

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized for Pasture B during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 07  
Kellner Reservoir, Allotment 12702  
Public acres – 80  
AUMs - 11  
Public land – 100%  
Livestock No. – 1 cattle  
Season of Use – 11/01–02/28; 03/01–04-30  
Grazing System - None  
Type Use – Custodial

Meeting Upland Standard:

- No, current livestock management is not a significant factor.

Upland Objectives:

- Continue to utilize the existing crested wheatgrass stand within the west pasture during the spring and defer grazing on the east pasture to allow for improved health of the native vegetation.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No

Biodiversity Objectives:

- Improve biodiversity utilizing crested wheatgrass to optimize native vegetation capability.

Conforms to Guidelines for Livestock Grazing Management:

No, does not conform with guideline 13 (Appendix C). The allotment is not meeting upland health standards to the presence of large amounts of crested wheatgrass, a non-native species.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue; 1 cattle, 11 AUMs, season of use - 11/01-02/28 and 03/01-04/30, 100% custodial.

Total preference would remain 11 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 08  
Kosir, Allotment 02641  
Public acres – 160  
AUMs – 49  
Public land – 100%  
Livestock No. – 4 cattle  
Season of Use – 03/01 – 02/28  
Grazing System – None  
Type Use – Custodial

Meeting Upland Standard:

- No, current livestock grazing management is not a significant factor.

Upland Objectives:

- Utilize the existing crested wheatgrass stand during the spring when the grass is best used.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock grazing management is not a significant factor.

Biodiversity Objectives:

- Improve biodiversity utilizing crested wheatgrass to optimize native vegetation capability.

Conforms to Guidelines for Livestock Grazing Management:

No, does not conform with guidelines 12 & 13 (Appendix C). The allotment is not meeting upland health standards due to the presence of large amounts of crested wheatgrass, a non-native species.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue; 4 cattle, 49 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 49 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 09  
Button Butte, Allotment 02599  
Public acres – 1,670  
AUMs – 330  
Public land – 33%  
Livestock No. – 245 cattle  
Season of Use – 05/15 – 09/15  
Grazing System – None  
Type Use – Exchange of Use

Meeting Upland Standard:

- No, but making significant progress towards meeting the standard. Historic overgrazing on the allotment is known to have occurred.

Upland Objectives:

- Continue to improve the amount and condition of the desired native vegetation found on the allotment.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Continue to improve and increase the amount of residual cover to provide habitat for ground nesting birds including sage-grouse. Maintain biodiversity within the allotment.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 1, 4, 5 & 11 (Appendix C). The allotment is not meeting, but making significant progress towards meeting the standards for rangeland health. If progress continues to be made towards meeting the standards for rangeland health, conformance with the guidelines will be addressed.

Proposed Action: The current exchange-of-use would continue; 245 cattle, 330 AUMs, season of use - 05/15-09/15, 33% active.

Total preference would remain 330 AUMs.

Range Improvements: No range improvements are proposed.

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ID # - 10

Lukens Flat, Allotment 02014

Public acres – 600

AUMs – 136

Public land – 100%

Livestock No. – 11 cattle

Season of Use – 03/1-02/28

Grazing System – None

Type Use – Custodial

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in late seral stage.
- Maintain upland range health.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment that continues to provide habitat for ground nesting birds including sage-grouse.

Conforms to Guidelines for Livestock Grazing Management:

Yes

Proposed Action: Based on current condition of the allotment and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue; 11 cattle, 136 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 136 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 11

Komarek, Allotment 02041

Public acres – 360

AUMs – 55

Public land – 100%  
Livestock No. – 5 cattle  
Season of Use – 03/1-02/28  
Grazing System – None  
Type Use – Custodial

Meeting Upland Standard:

- No

Upland Objectives:

- Improve vegetation to late seral stage.
- Maximize use of existing crested wheatgrass to allow deferment for native vegetation

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No

Biodiversity Objectives:

- Maintain biodiversity within the allotment.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 1, 4, 5 and 9-13 (Appendix C). The allotment is not meeting the upland health and biodiversity standards due to lack of desired plant communities, reduced resource capabilities and the presence of non-native vegetation.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue; 5 cattle, 55 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 55 AUMs.

A term and condition will be added to the permit as follows:

- Grazing use will not exceed the recognized carrying capacity of the public land. The permittee agrees to use the allotment mostly in the spring or fall as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 12  
Wolff Ind. B, Allotment 02513  
Public acres – 840  
AUMs – 261  
Public land – 100%  
Livestock No. – 22 cattle  
Season of Use – 03/01 – 02/28  
Grazing System – None  
Type Use – Custodial

Meeting Upland Standard:

- No, current livestock grazing management is not a significant factor.

Upland Objectives:

- Continue to utilize the existing crested wheatgrass stand within the allotment during the spring and defer grazing on the east pasture to allow for improved health of the native vegetation.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock grazing management is not a significant factor.

Biodiversity Objectives:

- Improve biodiversity utilizing crested wheatgrass to optimize native vegetation capability.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform with guidelines 12 and 13 (Appendix C). The allotment is not meeting upland health standards due to the presence of large amounts of crested wheatgrass, a non-native species.

Proposed Action: Based on the amount of crested wheatgrass that exists on the allotment and the amount of resources it would take to convert the crested wheatgrass to native vegetation, the BLM and permittee propose to not change the current management as the permittee typically uses the allotment from mid-April to mid-May and after shipping calves in late October.

The current permitted use would continue; 22 cattle, 261 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 261 AUMs.

The following terms and conditions will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).
- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.

Range Improvements: No range improvements are proposed.

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ID # - 13  
East Antelope, Allotment 15101  
Public acres – 3,411  
AUMs – 799  
Public land – 34%  
Livestock No. – 388 cattle  
Season of Use – 05/01-10/31  
Grazing System – Two pasture deferred & two pastures season long  
Type Use – Active

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in late seral stage at assessment sites 2 and 3.
- Improve vegetation to late seral stage at assessment sites 1 and 4.

Meeting Riparian Health Standard:

- No

Riparian Objectives:

- Improve 0.5 miles of Antelope Creek to proper functioning condition or above.
- Maintain 1.85 miles of Crooked Creek at proper functioning condition or above.

Meeting Water Quality Standard:

- Yes

Water Quality Objectives:

- Improve 0.5 miles of Antelope Creek to proper functioning condition or above.
- Decrease streambank alteration levels and width/depth ratios on Antelope Creek.

Meeting Biodiversity Standard:

- No

Biodiversity Objectives:

- Improve riparian function for 0.5 miles of Antelope Creek.
- Improve vegetation to late seral stage at assessment sites 1 and 4, which will provide forage and cover for antelope, elk and sage-grouse.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 2, 5 & 10 as the allotment is not meeting riparian health standards.

Proposed Action: The current permitted use would be modified and the pastures that are not part of the grazing rotation will be authorized on separate lines on the permit to accurately depict the current management. The current permittee has the grazing preference and grazing permit for the Chimney Crossing Allotment, 12501 (ID# 02) which borders this allotment to the East. It is proposed that the Chimney Crossing Allotment be fenced into 2 pastures with the grazing preference from what would be the west pasture of the Chimney Crossing Allotment being reallocated as the east pasture within this allotment to be used as part of a three pasture deferred rotation grazing system. The east pasture will have a permitted use of 265 AUMs, the middle pasture 279 and the west pasture 308.

East Antelope rotation - 349 cattle, 852 AUMs, season of use - 5/1-11/02, 40% active.

Bull Pasture – 10 cattle, 114 AUMs, season of use – 03/01-02/28, 100% custodial.

Holding Pasture – 8 cattle, 100 AUMs, season of use – 03/01-02/28, 100% custodial.

Total grazing preference would be modified to 1,066 AUMs.

The following terms and conditions will be added to the grazing permit:

- The East Antelope grazing rotation will be implemented upon completion of the chimney crossing cross fence. The objectives from the AMP signed in 1991 will still apply. The rotation will be as follows:

Year 1 – West, Middle, East  
Year 2 – Middle, East, West  
Year 3 – East, West, Middle

The maximum number of days of grazing in each pasture based on the authorized number of livestock is 67 days in the west pasture, 61 days in the middle pasture and 58 days in the east pasture.

- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.

Range Improvements: No range improvements are proposed on what is currently considered this allotment. See range improvements under ID # - 02, for a description of the fence to divide the Chimney Crossing Allotment, 12501.

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ID # - 14  
Jordan Home Ranch, Allotment 02012  
Public acres – 799  
AUMs – 147  
Public land – 100%  
Livestock No. – 12  
Season of Use – 03/01-02/28  
Grazing System – None  
Type Use – Custodial

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in current seral stage.
- Increase the amount of perennial bunch grasses.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity on the allotment and increase the amount of perennial bunch grasses and sagebrush.

Conforms to Guidelines for Livestock Grazing Management:

- Yes

Proposed Action: The current permitted use would continue; 12 cattle, 147 AUMs, season of use - 03/1-02/28, 100% custodial.

Total preference would remain 147 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 15  
Jordan East Pasture, Allotment 15105  
Public acres – 360  
AUMs – 72  
Public land – 100%  
Livestock No. – 6 cattle  
Season of Use – 03/01-02/28  
Grazing System - None  
Type Use – Custodial

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain current seral stage on three transect locations.

Meeting Riparian Health Standard:

- No, but making significant progress towards meeting the standard.

Riparian Objectives:

- Improve 0.9 miles of Crooked Creek to proper functioning condition or above by reducing the amount of weeds and undesired herbaceous vegetation within the riparian zone.

Meeting Water Quality Standard:

- Yes

Water Quality Objectives:

- Continue to support sandbar willow regeneration and streambank vegetative cover.

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain the existing stands of perennial forbs and bunchgrasses that provide sage-grouse nesting cover and forage for big game species.

Conforms to Guidelines for Livestock Grazing Management:  
Yes

Proposed Action: The current permitted use would continue; 6 cattle, 72 AUMs, season of use - 03/01-02/28 100% custodial.

Total preference would remain 72 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 16  
North Crooked Creek, Allotment 02506  
Public acres – 7,195  
AUMs – 1,465 W/G  
234 G  
Public land – 46%, 100% and 7%  
Livestock No. – W/G - 554 & 15  
G - 110  
Season of Use – W/G – 05/15-10/15  
– 03/01-02/28  
G – 06/01-10/15  
Grazing System – non-functioning three pasture deferred rotation  
Type Use – Active and Custodial

Meeting Upland Standard:

- No, current livestock management is a significant factor.

Upland Objectives:

- Improve vegetation to late seral stage by reestablishing the grazing rotation implemented in the existing allotment management plan.
- Improve livestock distribution through fencing and increased amounts of livestock water.

Meeting Riparian Health Standard:

- No, current livestock management is a significant factor.

Riparian Objectives:

- Improve 0.3 miles of Antelope Creek to proper functioning condition or above.
- Improve 2.4 miles of Crooked Creek to proper functioning condition or above.
- Maintain or improve 1.75 miles of Crooked Creek that are functional at risk with an upward trend.
- Increase sandbar willow regeneration on Crooked Creek.

Meeting Water Quality Standard:

- Yes

Water Quality Objectives:

- Maintain or improve all streams within the allotment to proper functioning condition or above.
- Increase streambank stabilizing vegetation on all streams.

Meeting Biodiversity Standard:

- No, current livestock grazing management is a significant factor.

Biodiversity Objectives:

- Increase the amount of residual herbaceous vegetation to provide nesting habitat for ground nesting birds including sage-grouse.
- Increase the amounts of native bunch grass species to provide forage for big game species including elk, mule deer and antelope.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 2, 4, 5, 10 & 12 as the allotment is not meeting the upland and riparian health standards due to current livestock grazing management.

Proposed Action: The current permitted use would be modified; W/G – Big Holding Pasture 15 cattle, 175 AUMs, season of use - 03/01-02/28, 100% custodial. AMP 554 cattle, 1290 AUMs, season of use – 05/15-10/15, 46% active.

G – Little Crooked Creek 110 cattle, 233 AUMs, season of use – 06/01-10/15, 47% active.

Total preference would remain 1,699 AUMs.

The following terms and conditions would be added to the grazing permits:

- W/G - The Big Holding pasture will be authorized as custodial grazing and is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for

rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

**Range Improvements:** The BLM and permittee propose the following projects to facilitate the proper implementation of the three pasture deferred rotation grazing system that is described in the North Crooked Creek Allotment Management Plan. The first project would be the construction of a livestock water pipeline from the Marcott Coulee well located in the SW ¼ SE ¼ of Section 9 in T. 20 N., R. 26 E. The pipeline would be approximately 6 miles in length and provide livestock water to two pastures within the allotment through the placement of four stock tanks that each hold a minimum of 1,000 gallons. The pipeline will be buried to a depth of 6 feet more or less and consist of either 1 ½ inch 160 PSI or Schedule 40 PVC (polyvinylchloride) pipe.

Approximately 1.9 miles of new allotment cross fence would be constructed in order to create pastures that are similar in size. The new fence will originate at the northwest corner of Section 28 of T. 20 N., R. 26 E. where it will travel east about ¼ of a mile and then turn in a southeasterly direction for about a ½ of a mile, when it will turn south and split the west and east halves of the southwest quarter. It will continue on this line for about 3/8 of a mile into Section 33 where it will intersect the existing allotment boundary fence. The construction of this fence would allow for the removal of 1.5 miles of wire fence located between the east and west boundaries of Sections 30 and 31 and 29 and 32 of T. 20 N., R. 26 E.

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ID # - 17

Maruska, Allotment 02646

Public acres – 957

AUMs – 199

Public land – 100%

Livestock No. – 6, 40 and 80 cattle

Season of Use – 03/01-02/28, 06/01-08/15 and 10/01-10/15

Grazing System – None

Type Use – Active

**Meeting Upland Standard:**

- Yes

**Upland Objectives:**

- Maintain vegetation in late seral stage.
- Increase litter amounts
- Consult with the permittee to facilitate the removal of tires and debris from two livestock reservoirs found on the allotment.

**Meeting Riparian Health Standard:**

- No riparian habitat on public land within this allotment.

**Riparian Objectives:**

- Remove tires from two reservoir spillways and other debris at the same reservoir locations.

**Meeting Water Quality Standard:**

- N/A

**Water Quality Objectives:**

- N/A

**Meeting Biodiversity Standard:**

- No

**Biodiversity Objectives:**

- Improve residual cover to support sage-grouse nesting.

**Conforms to Guidelines for Livestock Grazing Management:**

- Yes, other than trash and tires in and around two reservoirs located within the allotment.

**Proposed Action:** This allotment currently contains three pastures. To accurately reflect this, the BLM proposes to delineate the three pastures on separate lines of the permit; Section 28, Section 29 and Northwest. The Section 28 Pasture is 100% BLM with a total of 127 AUMs. The Section 29 Pasture is also 100% BLM with a total of 36 AUMs. The Northwest Pasture contains deeded lands, state lands and BLM administered LU lands. There are a total of 208 AUMs of forage available with 36 AUMs or 17% associated with the BLM land.

The current permitted use would be modified;

- Section 28; 53 cattle, 127 AUMs, season of use – 06/10-08/21, 100% active.
- Northwest; 89 cattle, 36 AUMs, season of use – 06/10-08/21, 17% custodial.
- Section 29; 3 cattle, 36 AUMs, season of use – 03/1-02/28, 100% custodial.
- 

Total preference would remain 199 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing for the Northwest and Section 29 pastures is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).



Range Improvements: Two reservoirs project # 444625 located in the NW ¼ of Section 28 and project #444689 located in SW ¼ of Section 29 have tires lining the spillway and other large debris that needs to be removed from public lands. The permittee will be given 1 year to remove the tires and other debris from the BLM land and properly dispose of it on their deeded lands or at a certified landfill or other waste disposal facility. If the sites are not cleaned up within one year, the BLM will remove the debris or hire it done and bill the permittee accordingly.

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ID # - 18  
Mathison Place, Allotment 02017  
Public acres – 51  
AUMs – 60 based on Exchange of use  
Public land – 100%  
Livestock No. – 5 cattle  
Season of Use – 03/01-02/28  
Grazing System – None  
Type Use – Active

Meeting Upland Standard:  
- No

Upland Objectives:  
- Improve vegetation and upland health to late seral stage.

Meeting Riparian Health Standard:  
- No

Riparian Objectives:  
- Improve width to depth ratio and increase the amount and extent of obligate wetland plants that have deep binding root masses to protect the streambanks.

Meeting Water Quality Standard:  
- Yes

Water Quality Objectives:  
- Improve channel function on 0.25 miles of Carroll Coulee.

Meeting Biodiversity Standard:  
- Yes

Biodiversity Objectives:  
- Maintain biodiversity and residual herbaceous cover to provide habitat for ground nesting birds.  
- Improve what appears to be a decadent and potentially declining sagebrush population.

Conforms to Guidelines for Livestock Grazing Management:  
- No, does not conform to guidelines 1, 2, 4, 5, 8 & 10. Guidelines 1, 2, 4, 5, and 10 are not conformed to due to the allotment not meeting the upland and riparian health standards.

Guideline 8 is not conformed to due to the placement of salt/mineral in close proximity to livestock water sources or riparian habitat.

Proposed Action: The current permitted use would continue; 5 cattle, 60 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 60 AUMs.

The following terms and conditions will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).
- Salt/mineral tubs will be moved to upland sites away from livestock water sources and riparian habitats.
- Permittees are required to ride and push any livestock within the riparian habitat at least ½ mile away as needed to allow for occasional rest and recovery of the existing riparian resources.

Range Improvements: No range improvements are proposed.

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ID # - 19  
Hay Coulee, Allotment 02505  
Public acres – 3,654  
AUMs – S- 775, P-42  
Public land – S-55%, P-33%  
Livestock No. – S-280, P-28 cattle  
Season of Use – S-05/16-10/15, P-06/01-10/15  
Grazing System – S-AMP, P-None  
Type Use – S-Active, P-Custodial

Meeting Upland Standard:

- No, current livestock grazing management is a significant factor.

Upland Objectives:

- Increase the amounts of cool season bunchgrass species, green needlegrass and blue bunch wheatgrass.
- Decrease amounts of bare ground.

Meeting the Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock grazing management is a significant factor.

Biodiversity Objectives:

- Increase the amount of herbaceous vegetation to provide plant material that will give cover to sage-grouse and other ground nesting birds

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 1, 4, 5, 8 and 11 (Appendix C). Guidelines 1, 4, 5, and 11 are not conformed to due to the allotment not meeting the upland health and biodiversity standards, because of current livestock grazing management. Guideline 8 is not conformed to due to the placement of salt/mineral supplement in close proximity to livestock water sources and/or riparian habitats.

Proposed Action: The BLM proposes to implement a three pasture deferred rotation grazing system as outlined as an alternative grazing schedule in the existing allotment management plan. The allotment would be split with a new allotment being created, thus eliminating the current common allotment. A new allotment number will be assigned to operator "P". Operator "S" will operate under the deferred rotation grazing system and operator "P" will graze a separate pasture within a new, separate allotment that is dominated by deeded and Crooked Creek Cooperative State Grazing District owned lands on a custodial use basis. The new allotment name will be North Valentine and the new allotment number will be 03198. This new allotment will be authorized for use by operator "P".

The current permitted use would be modified; S - 280 cattle, 775 AUMs, season of use - 05/16-10/15, 55% active. Total preference for operator "S" would remain 775 AUMs.

Permitted use for operator "P" – 10 cattle, 42 AUMs, season of use – 06/01-10/15, 100% custodial. Total preference for operator "P" would remain 42 AUMs.

The following term and condition will be added to both grazing permits:

- Salt/mineral tubs will be moved to upland sites away from livestock water sources and riparian habitats.

The following term and condition will be added to the grazing permit for operator "P":

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

The following term and condition will be added to the grazing permit for operator "S":

- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.

Range Improvements: The splitting of this common allotment will require several range improvement projects that will include fence removal, fence construction and an extension of a livestock water pipeline.

The fence removal that will occur consists of approximately 1.2 miles and is located in the S ½ of Section 16, T. 19N., R. 26E. The majority of this fence is located on state lands, so coordination with the NE Land Office of the Montana Department of Natural Resources will be required.

The proposed action will also require the construction of approximately 6.2 miles of new fence. The 3 miles of the fence would be a 4 wire boundary fence with the bottom wire being barbless and wire spacing from the ground up of 16, 22, 28 and 40 inches. This fence will be located in Sections 21, 22 and 28 of T. 19 N., R. 26 E. The remaining 3.2 miles of fence will be a 3 wire fence with the bottom wire barbless and wire spacing from the ground up of 16, 26 and 38 inches. Approximately 1.2 miles of this fence will be located on deeded lands within the east ½ of the west ½ of Section 20 of T. 19 N., R. 26 E. The remaining 2.0 miles of fence will be constructed on BLM lands within the same township and range in the following sections: east ½ of the northwest ¼ and the west ½ of the southwest ¼ of Section 29 and the northwest ¼ of the northwest ¼, the south ½ of the northwest ¼ and the east ½ of the southwest ¼ of Section 32.

The final range improvement project needed to implement the proposed action is the extension of a livestock water pipeline originating in Section 19 of T. 19N., R. 26E. and extending into Section 29. The extension would be approximately 1 mile in length and follow a two track trail; the tank would be located on land owned by the Crooked Creek Cooperative State

Grazing District. The pipeline will be buried to a depth of 6 feet more or less and consist of either 1 ½ inch 160 PSI or Schedule 40 PVC (polyvinylchloride) pipe.

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ID # - 20

Pitman Ranch, Allotment 02514

Public acres – 918

AUMs – 238

Public land – 100%

Livestock No. – 20 cattle

Season of Use – 03/01-02/28

Grazing System – None

Type Use – Active

Meeting Upland Standard:

- No, current livestock grazing management is a significant factor.

Upland Objectives:

- Increase the amount and diversity of native cool grass species.
- Consult with the permittee to develop and implement management actions to ensure uplands and biodiversity are meeting or making significant progress toward meeting rangeland health standards.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock grazing management is a significant factor.

Biodiversity Objectives:

- Improve residual herbaceous cover to support ground nesting birds including sage-grouse.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guideline 8. Guideline 8 is not conformed to due to the placement of salt/mineral supplement in close proximity to livestock water sources and/or riparian habitats.

Proposed Action: This allotment consists of four pastures. The current permitted use would be modified:

- 18 cattle, 215 AUMs, season of use – 03/01-02/28, 100% custodial.

Total preference would remain 238 AUMs, with 23 AUMs being placed in suspension due to a large prairie dog town in Section 9.

The following terms and conditions will be added to the grazing permit:

- During winter use hay feeding will not occur adjacent to unfenced BLM lands.
- Twenty-three AUMs in Section 9 have been placed in suspension due to the presence of a large prairie dog town. All or part of the AUMs will be returned to active use when the forage is available for livestock grazing as determined by the BLM's authorized officer.
- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).
- Salt/mineral tubs will be moved to upland sites away from livestock water sources and riparian habitats.

Range Improvements: No range improvements are proposed.

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ID # - 21

Big Joe, Allotment 02669

Public acres – 160

AUMs – 36

Public land – 100%

Livestock No. - 7 cattle

Season of Use – 06/1-10/31

Grazing System – None

Type Use – Custodial

Meeting Upland Standard:

- No, current livestock management is a significant cause.

Upland Objectives:

- Increase the amount of cool season bunch grasses.
- Increase litter amounts while decreasing the amount of bare ground.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock management is a significant cause.

Biodiversity Objectives:

- Increase the amount of residual herbaceous material to provide nesting habitat for ground nesting birds including sage-grouse.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 1, 4, 5, & 11. These guidelines are not conformed to due to the allotment not meeting the upland and biodiversity standards due to current livestock management.

Proposed Action: The current permitted use will be modified; 7 cattle, 36 AUMs, season of use - 05/01-09/30, 100% custodial. Total preference would remain 36 AUMs.

The following terms and conditions will be added to the grazing permit to ensure that grazing use does not exceed authorized numbers of AUMs:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).
- The permittee will use 4.4 acres/AUM when determining the maximum numbers of livestock to turn out.
- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.
- If actual use records indicate that livestock use exceeds what is authorized the permit a new permit with a season and numbers authorization will be issued as follows: 18 Cattle, 36 AUMs, season of use 06/01-07/31, 100% Public Land, Active.

Range Improvements: No range improvements are proposed.

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ID # - 22

Money Acres, Allotment 02019

Public acres – 360

AUMs – 71

Public land – 100%

Livestock No. – 9 cattle

Season of Use – 04/01-11/30

Grazing System – None

Type Use – Custodial

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in current seral stage.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment that will continue to provide sagebrush and residual herbaceous vegetation of ground nesting birds including sage-grouse.

Conforms to Guidelines for Livestock Grazing Management:

- Yes

Proposed Action: The current permitted use would continue; 9 cattle, 71 AUMs, season of use - 04/01-11/30, 100% custodial.

Total preference would remain 71 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is

being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 23

Sluggett Ranch, Allotment 02512

Public acres – 711

AUMs – 175

Public land – 100%

Livestock No. – 15 cattle

Season of Use – 03/01-02/28

Grazing System – None

Type Use – Custodial

Meeting Upland Standard:

- No

Upland Objectives:

- Improve vegetation to mid or late seral stage through better use of existing crested wheatgrass.
- Consult with the permittee to develop and implement management actions to ensure uplands and biodiversity are meeting or making significant progress toward meeting rangeland health standards.
- Ensure that supplemental feeding on BLM no longer occurs.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No.

Biodiversity Objectives:

- Improve vegetation to mid or late seral stage through better use of existing crested wheatgrass to improve residual cover for ground nesting birds including sage-grouse.
- Consult with the permittee to develop and implement management actions to ensure uplands and biodiversity are meeting or making significant progress toward meeting rangeland health standards.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 4, 5, 12 & 13. These guidelines are not conformed to due to the allotment not meeting the upland health and biodiversity standards because of current livestock management.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would be modified; 15 cattle, 175 AUMs, season of use - 3/1-2/28, 100% custodial.

Total preference would remain 175 AUMs.

The following terms and conditions will be added to the grazing permit:

- A maximum number of 150 cattle can graze the BLM portion of the allotment. The BLM permitted use will not be exceeded.
- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.

Range Improvements: No range improvements are proposed.

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ID # - 24

Antelope, Allotment 02508

Public acres – 1,238

AUMs – 302

Public land – 28%

Livestock No. – 193 cattle

Season of Use – 05/15-10/31

Grazing System – None

Type Use – Active

Meeting Upland Standard:

- Yes

Upland Objectives:

Maintain vegetation in current seral stage and increase the amount of decreaser grass species.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity emphasizing sagebrush canopy cover and understory vegetation for sage-grouse habitat.

Conforms to Guidelines for Livestock Grazing Management:

- Yes

Proposed Action: The current permitted use would continue. 193 cattle, 302 AUMs, season of use – 05/15-10/31, 28% active.

Total preference would remain 302 AUMs.

Range Improvements: No range improvements are proposed.

ID # - 25

Styer Antelope, Allotment 02510

Public acres – 480

AUMs – 119

Public land – 29%

Livestock No. – 73 cattle

Season of Use – 05/15-10/31

Grazing System – None

Type Use – Active

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in current seral stage.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/ A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment that continues to provide habitat for big game, sage-grouse and other ground nesting birds.

Conforms to Guidelines for Livestock Grazing Management:

- Yes

Proposed Action: The current permitted use would continue. 73 cattle, 118 AUMs, season of use – 05/15-10/31, 29% active.

Total preference would remain 119 AUMs.

Range Improvements: No range improvements are proposed.

ID # - 26

Galloway, Allotment 02516

Public acres – 160

AUMs – 46

Public land – 100%

Livestock No. – 4 cattle

Season of Use – 03/01-02/28

Grazing System – None

Type Use – Custodial

Meeting Upland Standard:

- No

Upland Objectives:

- Improve vegetation to mid or late seral stage.
- Consult with the permittee to develop and implement management actions to ensure uplands and biodiversity are meeting or making significant progress toward meeting rangeland health standards.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No

Biodiversity Objectives:

- Improve herbaceous understory to provide for ground nesting birds including sage-grouse and improve the quality of the existing Wyoming big sagebrush stand.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 1, 4, 5, 11 & 12. These guidelines are not conformed to due to the allotment not meeting the upland and biodiversity health standards because of current livestock management.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue; 4 cattle, 46 AUMs, season of use - 3/1-2/28, 100% custodial.

Total preference would remain 46 AUMs.

The following terms and conditions will be added to the grazing permit:

- A maximum number of 150 cattle can graze the BLM portion of the allotment. The BLM permitted use will not be exceeded.
- Actual Use (Form 4130-5) will be submitted annually to this office within 15 days following grazing use.

Range Improvements: No range improvements are proposed.

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ID # - 27

West Cr. Creek, Allotment 02504

Public acres – 1,719

AUMs – J – 196; J, M & A – 203; J-EOU–61

Public land – J – 42; J, M & A – 36, J-EOU 100

Livestock No. –

J - 85 cattle

J, M & A – 102 cattle

J - EOU – 11 cattle

Season of Use –

All – 05/16-10/31

Grazing System –

Type Use – J – Active & Exchange-of-use; J, M & A - Active

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in current seral stage.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment that continues to provide habitat for big game, sage-grouse and other ground nesting birds.

Conforms to Guidelines for Livestock Grazing Management:

- Yes

Proposed Action: The current permitted use would continue; J - 85 cattle, 196 AUMs, season of use - 05/16-10/31, 42% active; J, M & A – 102 cattle, 204 AUMs, season of use – 05/16-10/31, 36%, active; J – 11 cattle, 61 AUMs, season of use – 05/16-10/31 100% Exchange-of use.

Total preference for this allotment would remain 399 AUMs.

Range Improvements: No range improvements are proposed.

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ID # - 28

Styer Ind. B, Allotment 02509

Public acres – 40

AUMs – 9

Public land – 100%

Livestock No. – 1 cattle

Season of Use – 03/01-05/31 & 08/01-02/28

Grazing System – None

Type Use – Custodial

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in current seral stage.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment.

Conforms to Guidelines for Livestock Grazing Management:

- Yes

Proposed Action: The current permitted use would continue; 1 cattle, 9 AUMs, season of use- 03/01-05/31 & 08/01-02/28, 100% custodial.

Total preference would remain 9 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 29  
Big Crooked, Allotment 02503  
Public acres – 2,883  
AUMs – 434  
Public land – 45%  
Livestock No. – 212 yearling cattle, 1 yearling cattle  
Season of Use – 05/01-09/15 & 05/01-06/01  
Grazing System – Two pasture deferred  
Type Use – Active

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in current seral stage.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment.
- Increase amounts of native bunchgrass species.

Conforms to Guidelines for Livestock Grazing

Management:

- Yes

Proposed Action: Environmental assessment MT-060-07-76 with a signed Finding of No Significant Impact (FONSI) and a grazing decision has been issued to renew the fully processed grazing permit for this allotment. The final grazing decision maintained that the current permitted use would be modified; 212 yearlings, 433 AUMs, 45%, season of use, 05-01-09/15 and 1 yearling, 1 AUM, 100%, season of use, 05/01-06/01 to authorize the full amount of grazing

preference. A fully processed grazing permit in accordance with NEPA authorizing the use of this allotment has been issued and no further action needs to be taken at this time.

The two pasture deferred rotation grazing system that is currently in place will continue.

Range Improvements: No range improvements are proposed.

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ID # - 30  
Weaver Ranch, Allotment 02511  
Public acres – 812  
AUMs – 159  
Public land – 100%  
Livestock No. – 11 yearling cattle  
Season of Use – 03/01-02/28  
Grazing System – None  
Type Use – Custodial

Meeting Upland Standard:

- No

Upland Objectives:

- Maintain vegetation in late seral stage on Transect 1.
- Maintain vegetation in current seral stage on Transect 2 (predominantly crested wheatgrass).

Meeting Riparian Health Standard:

- N/A

Riparian Objectives:

- No riparian habitat on public land within this allotment.

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No

Biodiversity Objectives:

- Improve residual cover and utilize crested wheatgrass to optimize native vegetation capability.

Conforms to Guidelines for Livestock Grazing

Management:

- No, does not conform to guidelines 1, 5, 9 & 13. These guidelines are not being met due to the allotment not meeting the upland health and biodiversity standards.

Proposed Action: Environmental assessment MT-060-07-76 with a signed Finding of No Significant Impact (FONSI) and a final grazing decision has been issued to renew the fully processed grazing permit for this



allotment; no further action needs to be taken at this time.

The final grazing decision stated that the current permitted use would be authorized as follows:

- Public Domain - 2 yearlings, 22 AUMs, 100%, custodial, season of use, 03-01-02/28
- Section 25 - 6 Yearlings, 73 AUMs, 100% custodial, season of use, 03/01-02/28
- Sections 26 & 35 - 3 Yearlings, 39 AUMs, 100% custodial, season of use 03/01-02/28.

The following term and condition is part of the authorized use:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Total preference will remain 159 AUMs.

Range Improvements: No range improvements are proposed.

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ID # - 31  
Hanson Dam, Allotment 14904  
Public acres – 80  
AUMs – 16  
Public land – 100%  
Livestock No. – 1 cattle  
Season of Use – 03/01-02/28  
Grazing System – None  
Type Use – Custodial

Meeting Upland Standard:

- No, current livestock management is not a significant factor.

Upland Objectives:

- Improve the utilization of the existing crested wheatgrass stand by means of spring grazing.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock management is not a significant factor.

Biodiversity Objectives:

- Improve biodiversity utilizing crested wheatgrass to optimize native vegetation capability.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 12 & 13 due to the fact that the allotment is dominated by non-native crested wheatgrass and does not meet the upland health and biodiversity standards.

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue; 1 cattle, 16 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 16 AUMs.

A fully processed grazing permit in accordance with NEPA authorizing the use of this allotment will be issued and no further action needs to be taken at this time.

Range Improvements: No range improvements are proposed.

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ID # - 32  
Willmore, Allotment 02034  
Public acres – 200  
AUMs – 38  
Public land – 100%  
Livestock No. – 3 cattle  
Season of Use – 03/01-02/28  
Grazing System – None  
Type Use – Custodial

Meeting Upland Standard:

- Yes

Upland Objectives:

- Maintain vegetation in current seral stage.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- Yes

Biodiversity Objectives:

- Maintain biodiversity within the allotment.

Conforms to Guidelines for Livestock Grazing

Management:

- Yes

Proposed Action: Based on limited resources and management objectives, this allotment would continue to be administered as custodial use. The current permitted use would continue; 3 cattle, 38 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 38 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).

Range Improvements: No range improvements are proposed.

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ID # - 33

Nine Mile Common, Allotment 15037

Public acres – 640

AUMs – W-151

A-113

Public land – W-41%, A-29%

Livestock No. – W-61 cattle, A-65 cattle

Season of Use – W – 05/15-11/15

A – 05/16-11/15

Grazing System – None

Type Use – Active

Meeting Upland Standard:

- No, current livestock management is not a significant factor.

Upland Objectives:

- Maintain the current season of use to provide residual cover from the crested wheatgrass stand that provides nesting habitat for sage-grouse.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock management is not a significant factor.

Biodiversity Objectives:

- Maintain residual crested wheatgrass cover in the spring that will continue to provide nesting cover for sage-grouse that come off of a lek located on adjacent deeded lands.

Conforms to Guidelines for Livestock Grazing

Management:

- No, does not conform to guidelines 1, 12 & 13 due to the allotment being dominated by non-native crested wheatgrass.

Proposed Action: The current permitted use would continue; W-61 cattle, 152 AUMs, season of use - 05/15-11/15, 41% active and A-65 cattle, 114 AUMs, season of use – 05/16-11/15, 29% active.

Total combined preference would remain 264 AUMs.

Range Improvements: No range improvements are proposed.

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Identification No. - 034

Nine Mile Common, Allotment 02678

Public acres – 40

AUMs – 8

Public land – 100%

Livestock No. – 1 cattle

Season of Use – 03/01-02/28

Grazing System – None

Type Use – Custodial

Meeting Upland Standard:

- No, current livestock management is a significant factor.

Upland Objectives:

- Increase the amount of native bunchgrass species.
- Increase the production of native grass species.

Meeting Riparian Health Standard:

- No riparian habitat on public land within this allotment.

Riparian Objectives:

- N/A

Meeting Water Quality Standard:

- N/A

Water Quality Objectives:

- N/A

Meeting Biodiversity Standard:

- No, current livestock management is a significant factor.

Biodiversity Objectives:

- Increase the amount residual herbaceous cover through increased amounts of native bunchgrasses to provide for improve habitat for sage-grouse nesting that could occur as this allotment is adjacent to a active sage-grouse lek.

Conforms to Guidelines for Livestock Grazing Management:

- No, does not conform to guidelines 1, 4, 5, 10, 11, 12 & 13 due to the allotment not meeting the upland health and biodiversity standards, because of current livestock management and the presence of non-native crested wheatgrass.

Proposed Action: This 40 acre parcel is used when the adjacent grain field is summer fallowed. A large number of livestock are typically grazed, which has led to excessive use in some cases.

The current permitted use would continue; 1 cattle, 8 AUMs, season of use - 03/01-02/28, 100% custodial.

Total preference would remain 8 AUMs.

The following term and condition will be added to the grazing permit:

- Custodial grazing is authorized during the listed season. Grazing use will not exceed the recognized carrying capacity of the public land. This allotment may be used in conjunction with your normal operation as long as standards for rangeland health are being met or significant progress is being made toward achieving those standards (43 CFR 4180).
- The permittee proposes to graze the parcel one out of every three summer fallow rotations, so once every 6 years.

Range Improvements: The permittee proposes to install approximately ½ mile of temporary electric fence on the south and west boundaries the parcel and only graze it once every third summer fallow rotation; once every 6 years.

## **2.2.4 Range Improvement Projects, Existing and Proposed**

Regardless of funding and range improvement projects, permittees must manage livestock according to standards and guidelines (Appendices A and C). Proper livestock grazing management would ensure that allotments not meeting standards would begin to make significant progress towards meeting standards by the start of the 2009 grazing season. Maintenance of all existing and proposed projects would be the responsibility of the permittees. A grazing rest period of two growing seasons may be required following vegetation treatments or wildland fires. The actual rest period would depend on the recovery rates of each site as determined through monitoring. A list of proposed range improvement projects for the Northeast Fergus Watershed Area is listed in Appendix F. Projects would not be limited to the list or what was discussed in section 2.2.3; additional projects could be completed to improve management and meet standards.

Opportunities for rangeland health improvement as well as livestock production efficiency were analyzed. It is important to note that range improvement project funding occurs on a yearly basis and although variable from year to year, funding is typically limited and never fulfills the total needs. In addition, even with adequate funding, staffing may limit the amount of project work that can occur in any given year. With this in mind, projects proposed within this document would be prioritized and implemented based on the following key considerations:

- Allotments not meeting rangeland health standards; livestock grazing is a significant factor.
- Important resource values exist on the allotment (wildlife habitat, riparian/wetland habitat, fisheries habitat, etc.).
- Multiple resource value benefits would occur from the proposed action (wildlife, range, riparian, etc.).
- Projects are components of a grazing management system (e.g., deferment, rest, etc.).

Cultural resource surveys would be conducted prior to implementation of range improvement projects, including vegetation treatments. Monitoring of noxious weeds would be conducted for two years following any surface disturbance.

Visual resource clearances would also be obtained prior to implementation of projects. Any surface disturbance that permanently removes existing vegetation from an area larger than ¼ acre would be reseeded and native vegetation reestablished.

### 2.2.5 Black-Tailed Prairie Dogs

The JVP RMP directs that the BLM will maintain or manage prairie dog towns on public lands based on the values or problems encountered. Prairie dog towns would not be actively managed within the watershed area.

Thirteen active prairie dog towns were mapped (441 acres) on BLM land in the watershed area during the upland health inventories of 2006. In 2007 four of these towns were documented as being absent or nearly absent of prairie dogs. It appears that plague is spreading into northern Fergus and Petroleum counties. Prairie dog towns are indicated on Map M4.

### 2.2.6 Sage-Grouse

The JVP RMP directs that the BLM will improve the quality and quantity of nesting, brood rearing and winter habitat for upland game birds. The BLM will provide residual grass and forb cover for upland bird and waterfowl nesting. The BLM will manage for a variety of palatable forbs and maintain big and silver sagebrush on sage-grouse wintering and nesting areas. Grazing management plans will implement some form of grazing method (i.e., rest rotation, deferred rotation, seasonal or other methods). Livestock grazing management methods will be implemented prior to land treatments.

A majority of the watershed area is considered sage-grouse habitat with the exception of forested areas. There are 15 active sage-grouse strutting grounds (leks) on or near BLM land within the watershed area. Another 11 leks are inactive (Historic) or have not been monitored recently. Allotments not meeting the upland health standards due to current livestock grazing practices will require a change in grazing management. Rest rotation grazing is preferred to provide adequate herbaceous cover for grouse nesting on at least one pasture of allotments requiring change. Deferred rotation provides seasonal rest for upland vegetation, but does not always provide adequate herbaceous sage-grouse cover. Timely moisture events and subsequent late summer/fall regrowth are critical for deferred rotation success in sage-grouse habitat. Regardless of the grazing management prescription, it is essential that each allotment provide some area of adequate nesting cover each spring. Allotments within the watershed area not meeting standards would be monitored more closely than others, but all sage-grouse habitat would continue to be evaluated.

### 2.2.7 Fish Habitat Implementation

The JVP RMP Record of Decision (1994) states the following on pages 11 and 17, respectively:

(1) "As reservoirs are planned during the development of AMPs or habitat management plans (HMP), fisheries potential will be a key consideration in location and design. New fisheries reservoirs will normally be fenced and a livestock watering tank provided below the reservoir. Existing fisheries reservoirs will be fenced to exclude livestock, if necessary, to improve emergent vegetation, shade and/or improve the recreation experience."

(2) "Other reservoirs may be identified as fisheries reservoirs with priority consideration given to reservoirs near population centers and major access routes. The BLM will attempt to develop self-sustaining game fish populations while recognizing that some reservoirs will be maintained as put-and-take fisheries. The BLM may also improve existing habitat by modifying existing high potential reservoirs, considering fisheries potential during the design phase of new reservoirs, and attempting to locate reservoirs in a cluster with a variety of self-sustaining game fish."

Two reservoirs (Fritzner and Mauland) were constructed in 1990 within the east pasture of the East Indian Butte Common (2001) allotment. Neither reservoir had a sufficient watershed to support a fishery and was therefore watered from the Haines Ridge artesian well. Trout were stocked in 1992. Eventually the artesian water from the well produced salinity in the reservoirs such that trout could not survive. Well water has not been delivered to the reservoirs for several years and they are currently only shallow bog holes which are hazardous to wildlife and livestock. The proposal is to breach these reservoirs and remove the enclosure fences around them.

Five reservoirs on BLM land within the watershed area are currently being stocked by Montana Fish, Wildlife and Parks (MFWP) and provide recreation fisheries. These reservoirs, which are in close proximity and provide a fishery for rainbow trout, black crappie, largemouth bass and yellow perch, include:

- Jakes - T. 20 N., R. 24 E. Section 11, in East Indian Butte Allotment (2001)
- Buffalo Wallow - T. 20 N., R. 26 E. Section 29, in North Crooked Creek Allotment (2506)
- Crooked Creek - T. 20 N., R. 26 E. Section 34, in North Crooked Creek Allotment (2506)
- Holland - T. 20 N., R. 26 E. Section 15, in North Crooked Creek Allotment (2506)
- Whisker - T. 20 N., R. 26 E. Section 16, in Button Butte Allotment (2599)

Three of these reservoirs (Buffalo Wallow, Crooked Creek and Whisker) do not currently have legal public access. The BLM has plans to work with the various

landowners towards securing public access easements to these reservoirs.

Buffalo Wallow reservoir is currently in disrepair and needs major reconstruction to be stable. The overflow pipe has rusted out and the dam fill has washed out around the pipe over the past several years. The BLM did a temporary fix to block the water going through the overflow pipe and forced the overflow to an earthen spillway. To fix the overflow pipe properly it would require nearly total reconstruction of the reservoir dam and would be very expensive. The local BLM office has applied for repair funding in the past but has decided not to pursue that option until such time that a public easement has been obtained.

The BLM proposes various habitat improvements to these five reservoirs if improvements are necessary to maintain or improve sustainable fisheries. The BLM may complete the construction and assume maintenance responsibility of these projects. Habitat improvements to fishing reservoirs in the watershed area include:

- (1) Enhance spawning substrate and fish cover in reservoir by sinking Christmas trees, root wads, logs, boulders, etc.
- (2) Install aerator windmill sites to help prevent winter kill.
- (3) Install a 4-wire barbed wire fence (smooth bottom wire) around the reservoir to improve emergent vegetation for fish cover. Fencing reservoirs from livestock would only be accomplished if adequate offsite water could be provided through water gaps, pumping water from the reservoir to troughs, or providing other new water sources.
- (4) Plant some native shrubs with hog panel protection around the plantings. Plant in clumps and surround plantings with 2-4 hog panels and metal posts.

### **2.2.8 Adaptive Management**

Adaptive management would be used to alter the course of management if the proposed action is failing to achieve goals and objectives or if changing circumstances or direction dictates the need to make adjustments to management.

Adaptive management is a management approach that recognizes in advance that no amount of planning would be able to consider every possible combination

of events, contingencies, or foresee the degree of impact from unplanned events or new management direction. The adaptive management approach recognizes the need for flexibility to cope with changes and provides mechanisms to allow corrective actions and adjustments to occur based on monitoring results. Achieving goals and objectives outlined in this plan would be the catalyst for change.

Under adaptive management, various actions could be considered to address problematic livestock grazing issues, including but not limited to:

- increasing length of rest periods between grazing periods
- changing season of use
- altering livestock turnout location
- changing grazing intensity
- changing grazing duration
- improving livestock distribution

Improved livestock distribution could be achieved by constructing water developments and fences, selective salt and/or mineral placement, and changes to livestock turnout location and season of use. In some cases, exclosure fencing would be used to protect riparian areas.

If utilization levels, allotment monitoring or other indicators for rangeland health show that the health standards are not being met or progress is not being made toward meeting the standards, changes in management will need to be implemented. Additional allotment inspections and monitoring may be required in order to determine what is causing the allotment to not meet or make significant progress towards meeting the standards. If standards for rangeland health are not met or fail to make significant progress because of livestock management practices, additional actions may be taken pursuant to BLM's grazing regulations.

All changes would be reviewed by an interdisciplinary team in consultation with the affected permittee and any parties expressing concern about specific resource conditions before a decision is made to alter a course of action.

If monitoring and allotment evaluations (Appendix E) indicate that pastures/allotments are not meeting standards and are not making significant progress toward Proper Functioning Condition, changes in livestock grazing management or other activities authorized by the BLM that are contributing to the allotment not meeting the standards need to be implemented.



## Chapter 3

### Affected Environment

#### 3.0 Affected Environment

This chapter describes the environmental resources related to the issues in Chapters 1 and 2. The resources include the physical, biological, and socio-economic conditions that could be affected by the implementation of one of the alternatives.

The information in this chapter is organized into the following headings:

- 3.1 Rangelands/Vegetation
- 3.2 Livestock Grazing
- 3.3 Recreation/Visual Resource Management
- 3.4 Wildlife
- 3.5 Cultural Resources
- 3.6 Riparian/Hydrology
- 3.7 Soils
- 3.8 Air Quality
- 3.9 Economics/Sociology

#### 3.1 Rangelands/Vegetation

Rangeland vegetation consists of sagebrush grasslands, grasslands, and lightly vegetated badlands. Mixed shrub and tree (ponderosa pine) communities are common in coulees and benches throughout all of these vegetation types. Common grasses and grasslike species include bluebunch wheatgrass, green needlegrass, needle and thread, western wheatgrass, prairie junegrass, blue grama, prairie sandreed, Sandberg bluegrass, and threadleaf sedge. Introduced grasses are found in some areas, either in pure stands or intermingled with native species. Crested wheatgrass is the most prevalent introduced perennial grass in the watershed, with numerous pure or nearly pure stands in several allotments. Introduced annual grasses include cheatgrass and Japanese brome. Common shrubs include big sagebrush, silver sagebrush, saltbush spp., greasewood and rubber rabbitbrush. Other common vegetation includes prickly pear cactus, ponderosa pine and common juniper. There are no known occurrences of threatened, endangered, or sensitive plants in the watershed.

##### Upland Range Health

Rangeland Health Assessments used to determine if the allotments are meeting the standards for rangeland health were conducted during the summer of 2006. Rangeland health is defined as the degree to which the integrity of the soil, vegetation, water and air as well as

the ecological process of the rangeland system are balanced and maintained (BLM 2000).

Upland health was assessed at existing permanent study plots and areas within the allotment that represent the major ecological sites found on the allotments that are grazeable by the permitted livestock. The same criteria and protocol were used for all of the sites assessed. The criteria included ecological site index, indicators of rangeland health, and soil surface factors. Thirteen of the 34 allotments are meeting the upland health standard, 13 allotments are not meeting the upland standard; current livestock management is a significant factor and 9 allotments are not meeting the standards, but making significant progress towards meeting the standards. Appendix G displays a list of the Upland Health Assessment results by allotment.

Drought has influenced the condition of vegetation in some areas. To separate the impacts of drought from livestock use, the evaluation team looked at fence line contrasts and similar sites under different management to discern the amount of impact caused by livestock management versus impacts of drought.

##### Status of Upland Range Health

Seral stages and ecological site index scores were determined on upland sites using the NRCS ecological site index technical guides for each ecological site. This method assesses the seral stage of an ecological site and provides a scoring system. The higher the score, the higher the plant successional stage (seral stage). Changes in plant communities (known as plant succession) are characterized by different types of plant communities replacing other types of plant communities. A plant community reaches climax or Potential Natural Community (PNC) when it reaches a point that the community maintains itself and is relatively stable. Different stages of succession are called seral stages. The amount and type of disturbance, the site, and the amount of rest following disturbance often dictate the seral stage of the plant community. In prairie grassland ecosystems, areas that have prolonged disturbance with little rest have a high abundance of annual forbs and weeds, some annual grasses, and shallow rooted perennial grasses of short stature. These conditions would indicate a low seral stage. With the NRCS ecological site index system, the higher the score, the higher the seral stage.

Areas without recent disturbance or light disturbance followed by periods of rest usually reflect late seral or PNC. This stage is characterized by tall, deep rooted

grasses, fewer forbs and weeds, and in some cases a shrub overstory. Prairie ecosystems evolved with periodic disturbance in the form of fire, grazing, hail, and drought followed by periods of favorable growing conditions. In some cases a lack of some type of disturbance over a period of decades can cause succession to reverse toward lower or early seral conditions. Conversely, prolonged disturbance without adequate rest for plant recovery can also lead to early seral conditions. Proper livestock grazing management allows some disturbance followed by periods of rest during the growing season resulting in healthy, productive upland range sites.

On a site-specific scale, late seral or PNC conditions are associated with healthy rangelands and early (low) seral conditions are often associated with unhealthy rangelands. On a larger scale, however, a mix of seral stages provides habitat diversity. Healthy upland range sites generally maintain a high percentage of the plant community in late seral or PNC condition, although a small percentage of the total acreage may be in early seral stages. Examples of acceptable early seral conditions would be livestock watering points, trails, prairie dog towns and areas surrounding gates and cattleguards. Seral stages are shown by allotment and transect site in Appendix G.

Erosion condition class determinations (soil surface factors) were also completed to assess erosion conditions on rangelands. The method uses seven factors to assess the condition of the soil surface. Factors such as the amount of bare ground, rills, gullies or other forms of erosion are assessed and scored. These criteria are indicative of the amount of erosion that is occurring. The majority of the acreage in the watershed area rated in the stable or slight erosion class category.

The BLM also uses rangeland health indicators to assess and evaluate problematic upland range sites. These indicators provide no scores, and factor the structure and function of the ecosystem rather than individual components. Rangeland health indicators are an important and effective way to communicate problems or successes to permittees and the public.

The biotic and physical indicators include:

#### **Biotic**

- plant community diversity
- plant community structure
- photosynthesis activity
- plant status
- presence of exotic plants (weeds)
- seed production
- nutrient cycling

#### **Physical**

- flow patterns
- soil movement by wind or water
- soil crusting and surface sealing
- soil compaction
- rills
- gullies
- amount of ground cover
- cover distribution

Rangeland health determinations were made based on upland health assessments comprised of the ecological site index, soil surface factors, and range health indicators. Grazing allotments were placed in one of three categories: meeting the upland health standard, not meeting the standard but livestock grazing is not a significant factor (or the allotment is making significant progress toward meeting the standard), and not meeting the standard. Significant progress is determined when an allotment with degraded conditions is showing an upward trend. Summaries of rangeland health determinations are displayed in Appendix H.

#### **Noxious Weeds**

Noxious weeds are a serious threat to the State of Montana and the Northeast Fergus Watershed Area. Infestations of noxious weeds are present throughout the watershed, with higher concentrations along the major drainages and their tributaries, including Crooked Creek, Sand Creek, Sage Creek and Antelope Creek. Noxious weeds that have been identified within the watershed area include leafy spurge, Canada thistle, spotted knapweed, Russian knapweed, houndstongue and salt cedar. The Montana noxious weed list can be found in Appendix D.

The BLM has been actively involved in an integrated weed control program within the watershed area for several years. Weed infestations have grown appreciably during the past two decades. Biological control of leafy spurge shows promise on large, dense stands which have proven very difficult to control using chemical alone. Established insect populations are monitored, collected, and dispersed by BLM personnel and permittees. Spotted knapweed and Canada thistle biological control agents have been released on a limited basis within the watershed area. Effective biological control agents are currently not available for Russian knapweed or houndstongue.

Noxious weed species of concern which have recently been identified within the watershed are: Black henbane and Sulfur cinquefoil.

Salt cedar is an extremely invasive noxious weed presently expanding along the Musselshell River and in



and around Fort Peck Reservoir. Dense stands of salt cedar can deplete groundwater aquifers and dewater perennial watercourses. A mature salt cedar plant can transpire up to 300 gallons of water during a hot summer day.

### **Coniferous Forest**

Forested vegetation types include ponderosa pine and ponderosa pine/common juniper. Both vegetation types are common in the Northeast Fergus Watershed Area and are minor components of the existing ecosystem. Forested areas are generally patchy and disconnected because of the broken topography.

Conifer densities have been increasing in many forested areas. Pine seedlings and saplings are expanding into rangeland areas on forest margins. In some locations heavy stand densities cause competition among conifers, with associated declines in forest health and decreased productivity of understory vegetation such as grasses, forbs, and shrubs. Drought has exacerbated the condition. Understory conifers contribute to fuel loadings that create a continuous fuel bed from the ground to the canopy. Wildland fire can be severe in these areas.

The encroachment of ponderosa pine into open grass and shrub lands reduces biodiversity, crowds out sagebrush/grassland habitat and creates an increased threat of severe wildfires due to an increase in the continuity of fuels. Conifer encroachment is actively occurring in many areas.

## **3.2 Livestock Grazing**

A total of 34 grazing allotments permitted to 29 permittees are included in the watershed area. The majority of permits authorize cattle grazing only. The total permitted use in the watershed area is 13,569 Animal Unit Months (AUMs). Appendix I displays the current allotment information.

## **3.3 Recreation/Visual Resource Management**

### **Recreation**

The Northeast Fergus Watershed Area is located within the Judith Recreation Management Area (RMA MT060-07).

This extensive recreation management area (RMA) allows for dispersed and unstructured recreational activities on public land in the watershed area. Recreation opportunities include hunting, wildlife photography, wildlife viewing, sightseeing, and some pleasure driving where public land access is available.

The majority of use occurs during the summer and the fall hunting season.

Hunting opportunities and access for the general public in the watershed area are good although more ranches are selling hunting rights to outfitters and/or ranches are being sold as recreational or development properties which has led to the reduction of access in some areas.

Additionally, a number of dispersed campsites along the travel routes are used by hunters. These campsites are used most weekends, and sometimes for several weeks by different parties of hunters from September through November. A fee is not required for the general public, but camping is limited to 14 days. Camps must be moved at least five miles following the 14-day limit.

The Off-Highway Vehicle EIS and Plan Amendment for Montana, North and South Dakota (BLM 2003) does not allow cross-county vehicle travel except for administration of grazing allotments and other permitted activities by agency personnel or permittees.

Permittees are allowed to travel cross-county for administration of their permit/lease. Administration of a grazing permit/lease includes travel to repair range improvements and other tasks directly related to management of a grazing allotment such as monitoring of livestock and forage conditions, placing salt, moving cattle, etc.

### **Visual Resource Management (VRM)**

Public land within the watershed area has been assigned a Visual Resource Management (VRM) class based on a process that utilizes scenic quality and sensitivity to changes in the landscape based upon the distance zone from which a project or proposal would be seen by the casual observer. This is accomplished by incorporating the four primary elements found in the environment: form, line, color, and texture, into a proposed project. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The four VRM classes are numbered I to IV (Visual Resource Management Program, Bureau of Land Management, 1980); the lower the number the more sensitive and scenic the area. Each class has a management objective that prescribes the level of acceptable change in the landscape. The majority of the Northeast Fergus Watershed Area is within Class IV, and the areas that lie next to the Charles M. Russell Wildlife Refuge and the Missouri River are rated as Class III. The Class III rating allows for moderate contrasts to the environment, but they should be subordinate to the existing landscape. For Class IV lands, the level of contrast to the landscape from

authorized projects could be evident, but should be moderated by using the basic elements of form, line, texture, and color. Visual contrast ratings are at the manager's discretion for Class III and Class IV lands.

### 3.4 Wildlife Resources

The variety of upland and riparian vegetation within the watershed provides habitat for a diverse wildlife population. In a relatively small area, the habitat may include mixed coniferous forest, sagebrush steppe, grasslands and agricultural land. Over 50 mammals, 200 species of birds and 20 species of amphibians and reptiles inhabit these areas.

Wildlife species included on the latest Threatened and Endangered (T&E) list of Montana counties for Fergus and Petroleum Counties include; pallid sturgeon (Endangered) and black-footed ferret (Endangered). The pallid sturgeon is found in the Missouri River. There are no BLM parcels that have perennial streams in this watershed that are closer than eight miles to the Missouri River. The nearest documented black-footed ferrets are at the U-L Bend experimental release area on Charles M Russell National Wildlife Refuge 25 miles east of the watershed area. The prairie dog towns that were inventoried in this planning effort are very scattered and only one is larger than 100 acres in size. The prairie dog towns in Northeast Fergus County would not be considered sufficient habitat to sustain a population of black-footed ferrets.

#### Mammals

The following is a list of mammal species known to occur within or near the watershed area:

Badger ( <a href="#">Taxidea taxus</a> )
Black-tailed Prairie Dog ( <a href="#">Cynomys ludovicianus</a> )
Bobcat ( <a href="#">Lynx rufus</a> )
Bushy-tailed Woodrat ( <a href="#">Neotoma cinerea</a> )
Coyote ( <a href="#">Canis latrans</a> )
Deer Mouse ( <a href="#">Peromyscus maniculatus</a> )
Desert Cottontail ( <a href="#">Sylvilagus audubonii</a> )
Dwarf Shrew ( <a href="#">Sorex nanus</a> )
Elk or Wapiti ( <a href="#">Cervus canadensis</a> )
House Mouse ( <a href="#">Mus musculus</a> )
Least Chipmunk ( <a href="#">Tamias minimus</a> )
Least Weasel ( <a href="#">Mustela nivalis</a> )
Little Brown Myotis ( <a href="#">Myotis lucifugus</a> )
Long-legged Myotis ( <a href="#">Myotis volans</a> )
Long-tailed Vole ( <a href="#">Microtus longicaudus</a> )
Long-tailed Weasel ( <a href="#">Mustela frenata</a> )
Masked Shrew ( <a href="#">Sorex cinereus</a> )
Meadow Vole ( <a href="#">Microtus pennsylvanicus</a> )

Merriam's Shrew ( <a href="#">Sorex merriami</a> )
Mountain Lion ( <a href="#">Puma concolor</a> )
Mule Deer ( <a href="#">Odocoileus hemionus</a> )
Muskrat ( <a href="#">Ondatra zibethicus</a> )
Northern Grasshopper Mouse ( <a href="#">Onychomys leucogaster</a> )
Northern Pocket Gopher ( <a href="#">Thomomys talpoides</a> )
Olive-backed Pocket Mouse ( <a href="#">Perognathus fasciatus</a> )
Ord's Kangaroo Rat ( <a href="#">Dipodomys ordii</a> )
Porcupine ( <a href="#">Erethizon dorsatum</a> )
Preble's Shrew ( <a href="#">Sorex preblei</a> )
Pronghorn ( <a href="#">Antilocapra americana</a> )
Raccoon ( <a href="#">Procyon lotor</a> )
Red Squirrel ( <a href="#">Tamiasciurus hudsonicus</a> )
Richardson's Ground Squirrel ( <a href="#">Spermophilus richardsonii</a> )
Striped Skunk ( <a href="#">Mephitis mephitis</a> )
Vagrant Shrew ( <a href="#">Sorex vagrans</a> )
Water Shrew ( <a href="#">Sorex palustris</a> )
Western Harvest Mouse ( <a href="#">Reithrodontomys megalotis</a> )
Western Jumping Mouse ( <a href="#">Zapus princeps</a> )
White-footed Mouse ( <a href="#">Peromyscus leucopus</a> )
White-tailed Deer ( <a href="#">Odocoileus virginianus</a> )
Yellow-bellied Marmot ( <a href="#">Marmota flaviventris</a> )
Yellow-pine Chipmunk ( <a href="#">Tamias amoenus</a> )

The black-tailed prairie dog was ruled to be warranted for listing but precluded by the U.S. Fish and Wildlife Service in February of 2000. After a thorough review of the species they were removed from the candidate list in August 2004. The known prairie dog towns in the watershed area were mapped during the rangeland inventory of 2006. There are approximately 441 acres of active prairie dogs on BLM land within the watershed area that have been documented on all or portions of 13 different towns (Map M3). Most of the 13 prairie dog towns on BLM land have some potential for expansion. In 2007 four of these towns were documented as being absent or nearly absent of prairie dogs. It is apparent that plague is spreading into northern Fergus County. Because of the limited size of the dog towns in the watershed area, the opportunity for black footed ferret occupation is minimal. These dog towns provide opportunity for species such as burrowing owls, ferruginous hawks, and mountain plovers that are known to be associated with dog towns. Prairie dog towns provide an island of unique habitat that attracts a large number of predator species, particularly coyotes and badgers.

Elk, mule deer, and pronghorn antelope are major components of the wildlife community within the watershed area and whitetail deer are occasionally seen. Whitetail deer inhabit the riparian zones along the

major drainages and periodically move into the adjacent BLM uplands.

Mule deer occur throughout the area mainly associated with upland areas. The mule deer population is currently at an appropriate level. A ten year population increase has followed a very low 1996 mule deer count. Several factors have contributed to this recent population increase. The entire Northeast Fergus Watershed Area is considered valuable mule deer habitat. Both deer hunt units 410 and 417 are going to allow either sex mule deer rifle hunting with a general license in 2008. Hunt district 417 is up from 300 to 400 antlerless mule deer tags from 2007 and district 410 is up from 300 to 600.

Antelope occupy habitat throughout the watershed area. Most of this watershed area is in antelope hunt area 481 and a small portion is in hunt district 480. Antelope numbers were recovering very well following a period of high mortality during the winter of 2003 and 2004. The spring 2008 count showed a drop in numbers in local areas around central Montana, mostly south of the Northeast Fergus Watershed Area. Montana Fish, Wildlife and Parks (MFWP) proposes to leave the either sex and doe fawn tags the same in hunt district 480 and 481 as they were in 2007.

This area contains a trophy elk herd and winters a substantial number of bull elk along the Crooked Creek drainage. Both elk hunt districts 410 and 417 are popular and very hard to draw for rifle tags. Archery licenses for both areas have been unlimited until after 2008, in the future they will be limited quota. Cow hunting with rifles has been liberal in both hunt units for the past few years designed to get the numbers down to objectives. MFWP proposes to leave the either sex tags the same for both hunt areas in 2008 but they will drop the antlerless tags from 600 to 200 in hunt district 410 and raise from 350 to 400 in district 417.

The BLM's objectives are to provide suitable habitat for the appropriate number of big game species identified for each hunting district.

## Birds

The watershed area provides habitat for numerous species of birds. Within the watershed area there are approximately 200 species of resident, migratory and game birds including abundant waterfowl, grouse, turkeys, diving birds, pelicans, herons, birds of prey, shorebirds, gulls, terns, doves, owls, nightjars, hummingbirds, woodpeckers, flycatchers, shrike, vireos, jays, crows, larks, swallows, chickadees, nuthatches, wrens, bluebirds, thrushes, waxwings, warblers, tanagers, sparrows, buntings, blackbirds, orioles, and finches.

Following is a list of BLM sensitive bird species known to occur within or near the watershed area:

Baird's Sparrow ( <a href="#">Ammodramus bairdii</a> )
Brewer's Sparrow ( <a href="#">Spizella breweri</a> )
Burrowing Owl ( <a href="#">Athene cunicularia</a> )
Chestnut-collared Longspur ( <a href="#">Calcarius ornatus</a> )
Dickcissel ( <a href="#">Spiza americana</a> )
Ferruginous Hawk ( <a href="#">Buteo regalis</a> )
Franklin's Gull ( <a href="#">Larus pipixcan</a> )
Golden Eagle ( <a href="#">Aquila chrysaetos</a> )
Great Gray Owl ( <a href="#">Strix nebulosa</a> )
Greater Sage-Grouse ( <a href="#">Centrocercus urophasianus</a> )
Loggerhead Shrike ( <a href="#">Lanius ludovicianus</a> )
Long-billed Curlew ( <a href="#">Numenius americanus</a> )
Marbled Godwit ( <a href="#">Limosa fedoa</a> )
McCown's Longspur ( <a href="#">Calcarius mccownii</a> )
Mountain Plover ( <a href="#">Charadrius montanus</a> )
Northern Goshawk ( <a href="#">Accipiter gentilis</a> )
Peregrine Falcon ( <a href="#">Falco peregrinus</a> )
Red-headed Woodpecker ( <a href="#">Melanerpes erythrocephalus</a> )
Sage Sparrow ( <a href="#">Amphispiza belli</a> )
Sage Thrasher ( <a href="#">Oreoscoptes montanus</a> )
Sprague's Pipit ( <a href="#">Anthus spragueii</a> )
Swainson's Hawk ( <a href="#">Buteo swainsoni</a> )
Trumpeter Swan ( <a href="#">Cygnus buccinator</a> )
Veery ( <a href="#">Catharus fuscescens</a> )
Willet ( <a href="#">Tringa semipalmata</a> )
Wilson's Phalarope ( <a href="#">Phalaropus tricolor</a> )

The bald eagle was recently delisted from the threatened and endangered species list. The peregrine falcon was removed from the endangered list in 1999.

Bald eagle and peregrine falcon occurrence in the watershed is most probable during seasonal migration. Nesting and foraging habitat is very limited for both species in this watershed area. Bald eagles may be present in the area during late fall or winter feeding on carrion from hunting and road kills.

Tree nesting raptors such as Swainson's hawk, red-tailed hawk and golden eagles are known to be present in the few cottonwood trees along Crooked Creek. Ground nesting raptors including ferruginous hawks, burrowing owls and northern harriers are also present. Burrowing owls and ferruginous hawks have been documented taking advantage of the prey opportunities provided by prairie dog towns.

Sage-grouse distribution in northeast Fergus County is wide spread, most of the watershed area is considered to be appropriate habitat for sage-grouse. Fifteen active

sage-grouse strutting grounds (leks) are located on or near public land within the boundaries of the watershed area. Eleven historic or otherwise inactive leks have also been documented in the area over the years. Several land management factors could be contributing to diminishing lek attendance in the area. Intermingled private land in the traditional grouse areas has been actively cultivated in recent years. Unregulated livestock grazing can be a detriment to sage grouse nesting success. Grazing must be managed to provide adequate herbaceous nesting cover under the sagebrush overstory in some portions of the grazing allotments. Some parcels of public land contain predominant or continuous stands of crested wheatgrass persisting from the Bankhead-Jones Land Utilization era. Many of these crested wheatgrass dominated lands exhibit little reinvasion of the native sagebrush community and comprise a monoculture with limited sage grouse value.

The mountain plover was proposed for listing as threatened in 1999 but withdrawn in 2003. The home range of the mountain plover includes the short grass prairie from northern Montana to southern New Mexico. Mountain plovers have been documented in the watershed area and breeding in low densities was noted in the late 1990s. The mountain plover may be considered a disturbed-prairie species preferring arid flats with very short grass and a high proportion of bare ground. Prairie dog towns and a few acres of short grass dominated sites within the watershed area provide potential habitat for the mountain plover.

Five species of upland game birds are present in the watershed area; Hungarian partridge, sharp-tailed grouse, sage-grouse, Merriam's turkeys and ring-necked pheasant. Partridge are commonly associated with private cropland; sharp-tails are primarily located in the heads of brushy coulees and grasslands. Sharp-tail numbers have dropped during recent dry growing seasons, but 2007 was a successful nesting year. Pheasants are primarily found near farmland but also occupy well vegetated riparian areas. Merriam's turkeys can be found in the northern portion of the watershed area in the ponderosa pine zone. Turkey numbers seem to be increasing in most of Fergus County from where they were in the early 2000s. The spring of 2008 resulted in poor nest success for all upland game birds because of the extremely wet and cool period in late May and early June.

### **Fish**

Five reservoirs (Jakes, Buffalo Wallow, Crooked Creek, Whisker, and Holland) located on BLM land within the watershed area are currently being stocked by MFWP and provide recreation fisheries. These reservoirs are in close proximity and provide a fishery for rainbow trout, black crappie, largemouth bass and yellow perch. Sauger have been planted into Jakes Reservoir on an

experimental basis. Sauger were identified as a Montana Species of Special Concern in 2000.

A 1999 fish survey of Crooked Creek on the Charles M. Russell National Wildlife Refuge documented 10 different species of fish in an intermittent reach several miles downstream from the watershed area. Eight of the species were native to Montana. The most common fish, the plains minnow, is currently on the Montana Natural Heritage Watch List. While this inventory was outside of the watershed area, there is the probability that these species may occur upstream.

### **Amphibians and Reptiles**

Amphibians occurring in the watershed area include: boreal chorus frog, Columbia spotted frog, Great Plains toad, Northern leopard frog, plains spadefoot, tiger salamander, western toad, woodhouse toad, sagebrush lizard, short-horned lizard and painted turtle. Snakes found in the area include common, plains and terrestrial gartersnakes, eastern racer, gophersnake, prairie rattlesnake, milksnake, and western hognose snake. BLM designated sensitive species are the short-horned lizard, northern leopard frog, plains spadefoot, and western toad. Populations of many amphibian species appear to be in a sharp decline throughout the region.

Information regarding BLM Sensitive Species and distribution and occurrences and other non-game data was derived from the Montana Natural Heritage Program. For more information on wildlife and BLM Sensitive Species, this database is located on the internet at: <http://nhp.nris.mt.gov/>.

## **3.5 Cultural Resources**

The BLM broadly defines cultural resources as any traditional lifeway belief or cultural property. Cultural properties are defined as distinct evidence in areas of past human occupation, activity, and use. Traditional lifeway beliefs are defined as traditional value systems of religious beliefs, cultural practices, or social exchange that are not closely and tangibly defined or identified with definite locations (JVP 1992).

Early peoples in the study area were mobile hunters and gatherers throughout and up until the historic period. The following brief overview explains changes through time as summarized by other archaeologists (Frison 1978; Ruebelmann 1983).

The Early Prehistoric period (roughly 10,000 – 5,700 B.C.) is characterized by a tool assemblage consisting of large, lanceolate and/or fluted spear points, and multipurpose tools made of stone or ivory. Subsistence strategies specialized in hunting megafauna but smaller game and plant foods were utilized as well. Typical site

types include kill and butchering sites, open air camp sites, and limited activity sites.

The Middle Prehistoric period (roughly 5,000 B.C. – A.D. 400), is characterized by a shift in tool types from thrusting spears with lanceolate spear heads to spear throwers and darts with diagnostic spear points. Groundstone tools also begin to show up in the assemblages. Subsistence strategies shift from more specialized hunting of megafauna to a broader spectrum strategy which becomes focused on bison by the end of this period. Plant procurement and use also occurs. Evidence of storage in the form of storage pits begins to show up during this period as do large cooking pits. Site types typical of this period include kill and butcher sites, camp sites, and rock shelters. Stone circle sites are rare in this area.

The Late Prehistoric period (roughly A.D. 500 – 1800), is characterized by a technological shift from spear throwers and darts to bow and arrows. Tool assemblages consist of small side, corner, or tri-notched points. Some ceramics become evident in the record in limited number on the Northwest Plains at this time. Grooved mauls, bone fleshers, and shell beads are common. Subsistence strategies continue to focus on bison procurement. Large communal bison kill/jump sites, rock shelters, wind breaks, and caves are the site types typically found in this area. Stone circle sites are rarer compared to northern areas.

During the historic period, settlers by the thousands came into the area to live on homesteads. Germans and Scandinavians came from the Midwest, as did eastern European immigrants like Bohemians and Yugoslavs (JVP 1992).

Cultural sites can be considered significant for several reasons; some because information about the past can be learned through methodical study of the sites, while other sites communicate a sense of a particular time period they represent in history. Finally, sites can be considered to be important because of the current use or values associated with the location.

An important consideration for management actions in this area is preserving the values of the cultural properties contained within. In order to preserve the integrity of a cultural property, it is sometimes necessary to preserve the location in which the cultural property is found. This is an important consideration when the management actions have the potential to affect the location of a cultural property, thus affecting the overall integrity of the cultural property.

The cultural resource site database maintained by the Montana State Historic Preservation Office was reviewed on January 29, 2008. A printout from the database was compared to the Northeast Fergus area

which shows land status. Sixty-eight cultural resource inventories have been documented within the analysis area. Inventories were completed primarily on disposal tracts identified for exchange or sale, road upgrades, and for range developments (pipelines, wells, fences, reservoirs, tanks).

A total of 108 cultural sites have been documented within the watershed area on private land and land administered by the BLM. The prehistoric sites include lithic scatter sites, fire hearths/roasting pits, stone circles, rock alignments, and rock cairns. The historic sites relate primarily to homesteading and early agriculture, irrigation, bridges and transportation systems, reclamation projects, and historic trash/dumps. Of the 108 sites, none have been identified as being eligible for listing on the National Register of Historic Places. The 103 sites identified as being unevaluated receive the same protection as those sites that are eligible, until such time as their eligibility can be determined. Additionally, one paleontological locality (dinosaur) dating to the Jurassic has been documented in the watershed area.

Table 3.1 lists the total cultural resources identified within the watershed area.

Table 3.1 Cultural Resources Identified within the Watershed Area				
	<i>Eligible</i>	<i>Ineligible</i>	<i>Unevaluated</i>	<i>Total</i>
Historic		4	17	21
Prehistoric		2	80	82
Mixed			5	5
Paleonto-logical			1	1
Total	0	6	103	109

Ninety-five percent of the sites within the analysis area have not had their eligibility determined. This is directly related to the types of projects with which the inventories were associated. If a parcel surveyed for land disposal was found to contain archaeological remains, the parcel generally was dropped from consideration for disposal. Without a compelling reason to evaluate the site a formal determination was not made. For those sites discovered during the course of an inventory for a range development, an avoidance strategy was employed which generally involved relocating or rerouting the proposed range development. By moving the project, the site was no longer within the area of potential effect, removing the need to determine the site's eligibility.

A complete listing of known sites and inventories conducted within the Northeast Fergus Watershed Area between 1977 and 2008 can be found in the project file.

### 3.6 Riparian/Hydrology

Riparian areas are defined as the green zones associated with lakes, reservoirs, estuaries, potholes, springs, bogs, wet meadows, and streams (intermittent or perennial by Lewistown Field Office definitions). Riparian areas are characterized by water tables at or near the soil surface, and by vegetation requiring high water tables. A universally accepted definition satisfactory to all users has not yet been developed because the definition depends on the objectives and the field of interest. However, scientists generally agree that riparian areas are characterized by one or more of the following features: 1) *wetland hydrology*, the driving force creating all riparian areas, 2) *hydric soils*, an indicator of the absence of oxygen, and 3) *hydrophytic vegetation*, an indicator reflecting riparian site conditions.

Most of the riparian areas on BLM land within the watershed area were assessed for health. Appendix J provides a summary of the completed assessments by allotment. Riparian health ratings consist of three categories; proper functioning condition (PFC), functional at risk (FAR), and nonfunctional (NF). Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to:

- dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality;
- filter sediment, capture bedload, and aid floodplain development;
- improve flood-water retention and groundwater recharge;
- develop root masses that stabilize streambanks against cutting action;
- develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and
- support greater biodiversity (BLM 1998).

The assessed streams include Antelope Creek, Carroll Coulee, Carter Coulee, Crooked Creek, and Sand Creek. All the fore mentioned streams are intermittent. However, they do support obligate wetland plant species, and Crooked Creek supports woody species such as willows.

Crooked Creek is a broad, meandering stream with cutbanks typically on the outside of meander bends and well developed point bars on the inside. Approximately 8.20 miles of Crooked Creek were assessed on BLM land within the watershed area, and 2.15 miles were PFC, 3.65 miles were FAR (upward trend), 1 mile was FAR (static), and 1.4 miles were NF. Areas in good

vegetative condition support a variety of herbaceous species such as prairie cord grass, three-square bulrush, spike sedge, western wheatgrass, quack grass, and green needle grass. Sandbar willow is also common on Crooked Creek. The degraded areas on Crooked Creek generally had high percentages of disturbance-caused, undesirable species such as foxtail barley, Kentucky bluegrass, American licorice, and cockle burr. These areas also tended to exhibit altered channel dimensions with higher streambank alteration levels and larger width/depth ratios. Livestock grazing and noxious weeds were the primary causes of altered conditions in degraded areas.

Approximately 2.3 miles of Antelope Creek were assessed on BLM land within the watershed area, and 1.5 miles were FAR (upward trend), 0.3 miles were FAR (static), and 0.5 miles were nonfunctional. Antelope Creek is comprised of similar plant species as Crooked Creek; however, willow species are nearly absent with the exception of a couple very small patches. Channel dimensions are significantly different within the nonfunctional reach than other areas on Antelope Creek. The width/depth ratio is very large, and plant species composition is almost solely disturbance related foxtail barley and cockle burr.

Sand Creek, Carter Coulee, and Carroll Coulee all appear to function very similarly. More than likely, this is because their watersheds predominantly share similar geology. All the aforementioned streams are located within the extremely erosive Bear Paw shale, and all showed similar potential channel geometry in areas with good vegetative condition. These areas are marginally riparian, and the only obligate wetland plant species supported are alkali bulrush, three-square bulrush, and prairie cord grass. No potential exists for riparian woody species. However, the riparian herbaceous vegetation plays an important role in stream function on these streams. Sand Creek, Carter Coulee, and Carroll Coulee all have a series of multiple headcuts migrating upstream through valley fill. Where the vegetation is in healthy condition, as the headcut widens, sediment begins to be filtered and a narrow channel with a wide floodplain develops. Areas on Carter Coulee and Carroll Coulee with concentrated livestock use did not follow this channel evolution and their streambank vegetation composition shifted towards higher percentages of Japanese brome, foxtail barley, American licorice, and cockle burr. On Sand Creek, approximately 3.5 miles were assessed on BLM land, and all were rated as PFC or FAR (upward trend). One mile on Carter Coulee was nonfunctional and 2 miles were FAR (static). Livestock grazing was a contributing factor along with noxious weeds. On Carroll Coulee, 2 miles were FAR (upward trend), and ¼ mile was nonfunctional because of livestock.

The health of streams within the Northeast Fergus Watershed Area was assessed with the Montana Riparian and Wetland Association (MRWA) Lotic Wetland Health Assessment for Stream and Small Rivers and the PFC checklist (BLM 1998). A total of 19.25 miles were assessed, and 4.65 miles were PFC, 8.15 miles were FAR (upward trend), 3.3 miles were FAR (static), and 3.15 miles were NF. Riparian areas that were FAR or NF because of causes that are within BLM's management capabilities such as weeds or livestock grazing require corrective actions.

In the type of lands administered by the BLM in the watershed area, runoff is generated by precipitation on the watershed. Contribution of groundwater to runoff, especially from adjacent watersheds, is usually negligible; however, small springs do occur in the watershed area. Soil and vegetation conditions within the watershed area may have a small influence on runoff. Agriculture and livestock grazing have led to a change in plant cover that has reduced soil-moisture storage. The altered infiltration and evapotranspiration rates have resulted in an increase in the timing and peak of runoff. Although the annual water yield is more than likely larger than historic conditions, effluent flows throughout the latter summer have probably decreased in the major drainage bottoms.

No streams within the watershed area are listed as water quality impaired by Montana Department of Environmental Quality (MDEQ). However, it is a safe inference that areas of degraded upland and riparian range condition could be contributing non-point source pollution to waterbodies. Pollutants often times include increased levels of fecal coliform, nitrates, temperature, and sediment. The BLM is committed to the objectives of the Federal Clean Water Act to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Federal agencies are obliged to meet state water quality standards that protect beneficial uses of lakes, rivers, streams, and wetlands. BLM mitigates non-point source pollution and complies with Clean Water Act by generating improving trends in condition. This is most often times accomplished by implementing grazing BMPs.

A majority of the watershed area is located within either the Lower Musselshell subbasin, which has a completed water quality restoration plan, or the Fort Peck Reservoir subbasin, where the Total Maximum Daily Loads (TMDL) process has not been started. Prior to the adoption of a water quality restoration/TMDL plan, the BLM, through a memorandum of understanding (MOU) with MDEQ, agrees to use "reasonable land, soil and water conservation practices" to prevent harm to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.

Groundwater, greater than 500 feet below the surface, can be found in several formations such as the Judith River Formation, Eagle Sandstone, First Cat Creek Sandstone, and the Kootenai Formation (Second and Third Cat Creek). Deep wells are often under artesian pressure; however, water quality is extremely variable. Sodium, bicarbonate, and sulfate concentrations in the Eagle may be several thousand mg/L and suitable only for livestock use. On the other hand, total dissolved solids in the Third Cat Creek Formation are generally low enough for domestic or livestock use.

### 3.7 Soils

Soils within the watershed developed primarily from sedimentary rock (shales, siltstone, and sandstone) and from lesser amounts of slope and recent alluvium. Soil patterns are complex and vary in physical and chemical properties, productivity, and erodibility. Soluble salts and sodium are present in many soils of the area. Vegetation composition and production are affected where soils have high concentrations of salts.

Most of the gently sloping to steep uplands and escarpments are comprised of either clayey soils weathered from fissile shales or sandy soils weathered from sandstone. These sedimentary soils are usually vulnerable to degradation and highly erosive because of extreme physical properties such as high clay content, slow permeability, very high surface runoff, relatively shallow to moderate depth (less than 40 inches) to bedrock, droughty, and sparse vegetative ground cover. Active geologic erosion is observed on these landscapes. Erosion can be accelerated by surface disturbance, especially on steep and very steep slopes when the protective vegetative cover is removed. The major soil groups that dominate the watershed area are the Thebo-Neldore, Thebo-Neldore-Absher, Delpoint-Yamac-Marmarth and the Tally-Flasher-Chinook. The Thebo-Neldore and Thebo-Neldore-Absher make up the majority of the watershed area. Most of these soils are moderately deep and well drained with clay surface layers. Some of the soil can be affected by high concentrations of salt, which will affect vegetative productivity. Some of the soils have developed from sand and silt stone parent materials will have sandy or silty surface textures and greater potential for vegetative production. Ecological sites associated with these soils include: Clayey, Clay pan and Dense clay 11 to 14 inch precipitation zone, sedimentary plains, central.

The Delpoint-Yamac-Marmarth and Tally-Flasher-Chinook are minor soil groups within the watershed area and are derived from weakly consolidated sandy and silty sedimentary beds. They have silty or sandy surface layers. Ecological sites associated with these soils include silty, shallow silty, sandy, sands 11 to 14 inch precipitation zone, sedimentary plains, central.



Areas of steep or very steep (>20% slope), barren or nearly barren land are scattered throughout the watershed area and are dissected by many drainage channels and have exposures of consolidated sedimentary beds of shale and sandstone.

Complete descriptions for the listed soil series and ecological sites are available on the internet at:

<http://soils.usda.gov/technical/classification/osd/index.html> (soil series); and  
<http://efotg.nrcs.usda.gov/treemenuFS.aspx?File=30071&MenuName=menuMT.zip>  
(ecological sites).

Included in the series descriptions are taxonomy, horizon descriptions, range of characteristics and other pertinent information.

### 3.8 Air Quality

Air quality in the Northeast Fergus Watershed Area is generally considered good to excellent most of the year, meeting air quality standards set forth by the National Clean Air Act (U.S. Congress, 1967, amended 1972, 1977). All of the lands within and adjacent to the watershed area are in a Class II airshed as designated by the 1977 Clean Air Act.

A planning and management process, "Prevention of Significant Deterioration" (PSD), was introduced as part of the 1977 Amendment to the Clean Air Act. These PSD requirements set limits for increases in ambient pollution levels and established a system for preconstruction review of new, major pollution sources. Three PSD classes have been established. Class I allows very small increases in pollution; Class II allows somewhat larger increases; and Class III allows the air quality to deteriorate considerably. In general, Class I is designed for pristine areas where almost any deterioration would be significant. Class II allows for moderate, well-controlled growth and Class III allows pollutant levels to increase considerably (JVP).

During the summer and winter months, atmospheric conditions tend to be more stable, reducing particulate dispersal which may negatively affect air quality. Spring and fall typically have atmospheric conditions that favor smoke/particulate dispersal.

Major air pollutants include dust generated by naturally dry, windy conditions, smoke from wildland fires, and smoke and dust created by agricultural operations. Minor pollutants could include farm machinery exhaust, crop harvest dust, recreational vehicle and equipment exhaust, and road maintenance operations.

Topography within the watershed consists of flat to rolling uplands broken with steep drainages characteristic of breaks along tributaries to the Musselshell River. Inversions may develop and trap suspended particulate matter for longer durations within these drainages.

### 3.9 Economics/Sociology

The watershed area is located within Fergus County in central Montana. Agriculture is the major industry. Recreation, mainly hunting and associated services also contribute considerably to the overall economy of central Montana.

BLM administered land comprises 59,418 acres within the watershed area, approximately 2% of the total acreage of Fergus County.

Within the Northeast Fergus Watershed Area, 29 permittees graze livestock on public land administered by the BLM. All of the permittees have cow-calf operations; some engage in supplemental farming and/or yearling cattle operations. A total of 13,569 AUMs are permitted in 34 allotments.

Local residents and other public land users exhibit attitudes and values typical of a rural farm/ranch oriented society in the western United States. Residents value the rural character of the area, wide-open spaces, naturalness and solitude. Positive aspects of the area include the independence and industriousness of the local people, lack of urban problems, relaxed pace and personal freedom. Residents have a strong sense of heritage.

Agricultural enterprises are predominately family operations with a long history in the area. Many of these ranches have grazing leases on state lands that are intermingled with private and public land. Changes currently affecting these ranches include increasing recreation in the area, increased land values and implementation of standards and guidelines by the BLM.



# Chapter 4

## Environmental Consequences

### 4.0 Environmental Consequences

This chapter is the scientific and analytic basis for the comparison of the alternatives outlined in Chapter 2. The potential environmental impacts of each alternative in relation to the issues and concerns identified in Chapter 1 are described.

The information in this chapter is organized into the following headings:

- 4.1 Alternative 1, Continuation of Current Management
- 4.2 Alternative 2, Proposed Action

The following critical elements of the human environment were considered but not analyzed. These elements would not be affected by the proposed action or current management and will not be discussed further.

- Environmental Justice
- Farmlands (Prime or Unique)
- Native American Religious Concerns
- Wastes (Hazardous/Solid)
- National Energy Policy (Executive Order 13212)
- Wilderness (none present in the watershed area)
- Wild & Scenic Rivers (none present in the watershed area)

### 4.1 Impacts Under Alternative 1, Continuation of Current Management

This section discusses the impacts of renewing grazing permits with current terms and conditions and no management changes to environmental elements in the watershed area.

#### 4.1.1 Rangelands/Vegetation

If current grazing management continues, rangelands within the watershed would be affected in accordance with the current upland and riparian condition and trend discussed in sections 4.1.2 and 4.1.3 below.

Under current grazing management, upland sites that are meeting standards would slowly improve or remain stable. All available information indicates a static or slight upward trend on upland sites meeting standards.

Upland sites not meeting standards as a result of livestock grazing would continue to decline in

productivity and upland health (Appendices G and H). Without periodic deferment from grazing during the growing season, perennial grasses in these degraded areas would continue to have low vigor and density with limited reproduction of desirable grasses occurring. Annual grasses, shallow rooted perennial grasses, forbs, cactus and fringed sagewort would continue to be abundant.

Under current management, some allotments are not meeting the upland standard due to:

- Poor livestock distribution
- Unfenced farmland
- Lack of grazing rotation schedule
- Continual season-long grazing
- Large acreages of nonnative species, including crested wheatgrass

Plants on these allotments are not vigorous and lack sufficient root reserves and root mass to adequately cope with drought. These allotments are at high risk of continued deterioration and may eventually drop into an early seral stage, with lower plant diversity, loss of topsoil and productivity.

### Weeds

Under current management, noxious weed control within the watershed area is somewhat inconsistent. Some permittees have signed cooperative weed control agreements and are actively involved in weed control on their allotments; others have no agreements and are not involved in weed control. The present level of weed control could lead to an increase in noxious weeds in the watershed area, especially on grazing allotments lacking cooperative weed control agreements. Alternative 1 would not require noxious weed control cooperative agreements as a term and condition of the grazing permit.

### Coniferous Forest

Maintaining current management of livestock grazing would not impact coniferous forests. This alternative would not initiate prescribed fire or mechanical treatments.

#### 4.1.2 Livestock Grazing

Implementation of Alternative 1 would not impact livestock grazing because no changes to current operations would be proposed.

#### **4.1.3 Recreation/Visual Resource Management**

No impacts to recreation and visual resources (direct or cumulative) would occur under this alternative.

#### **4.1.4 Wildlife**

Under current management, the riparian health, upland health and noxious weed infestation issues that have been identified would not improve. Upland sites not meeting standards as a result of livestock grazing would continue to decline in productivity and upland health. Browse availability for mule deer and residual herbaceous vegetation for wintering elk would continue to decline. Forage and cover for birds and other small mammals would also deteriorate. Over time, the reduction in wildlife forage and increased levels of noxious weeds would cause a cumulative loss in the value of these isolated unhealthy areas as wildlife habitat.

Improvement of non-functioning riparian areas would not occur and the trends would remain static or continue to degrade. Unhealthy riparian areas would create a negative impact to most wildlife species. Vegetative diversity and structure that are associated with healthy riparian areas would not be available for cover, foraging and nesting areas for many species.

Noxious weeds would continue to spread because the present weed control program has not kept pace with infestation growth. The diversity of native plant species, particularly along the smaller riparian systems, would eventually decline to the point that the habitat would be of minimal value for cover and forage to wildlife.

#### **4.1.5 Cultural Resources**

Under current management, cultural sites would remain static to slightly deteriorating. Direct impacts to specific sites from BLM approved actions would be reduced or eliminated where possible. Visual impacts from BLM actions would be mitigated or eliminated where setting contributes to the integrity of a site eligible for listing on the National Register of Historic Places. Less specific impacts such as the gradual loss or deterioration through erosion or weathering would continue. Loss and damage would also continue to occur as a result of unauthorized and unlawful collection and/or vandalism.

Significant cultural sites would be identified for stabilization or mitigation of deterioration as time and funding allow. Site monitoring would continue, and eligibility determinations would be made as undertakings are proposed in areas that contain cultural resources.

#### **4.1.6 Riparian/Hydrology**

Under current grazing management, riparian sites that are meeting Standards (Appendices H and J) would improve or remain stable. All available information indicates a static or upward trend on riparian sites meeting Standards.

Riparian sites not meeting standards as a result of livestock grazing (Appendices H and J) would remain static or continue in a downward trend since no changes in livestock grazing would occur. Without periodic rest from grazing during the growing season, perennial grasses, forbs and woody species in these degraded areas would continue to have low vigor and density with limited reproduction. Riparian plant community succession and streambank stabilization would be interrupted or impeded leading to degradation and potential loss of functioning riparian areas.

Water quantity and quality affected by flow diversion, impoundments, and stream channel modifications such as spreader dikes would not change. Where infiltration and evaporation rates are altered because of change in plant cover, the time of concentration and water storage within the watershed area would remain below natural levels.

This alternative would not address the water quality concerns within the watershed area or comply with the MOU with MDEQ since no improvements would be made to upland or riparian vegetation. Those public lands in the watershed area that are in less than proper functioning condition would continue to possibly contribute nonpoint source pollution to streams.

#### **4.1.7 Soils**

This alternative would generate the highest level of soil loss from wind and water erosion. In some cases accelerated erosion is occurring on allotments not meeting the upland standard. If no management changes are made, soils in these allotments would continue to lack sufficient ground cover and root density to resist erosion and would continue to erode at levels higher than expected for the site. Infiltration of precipitation into soils of these sites would be reduced by soil compaction, lack of plant and ground cover to intercept overland flow and lack of organic matter near the soil surface. Accelerated erosion would not occur on allotments that are meeting the upland standard as plant cover and type on these allotments would remain adequate to resist erosion.

#### **4.1.8 Air Quality**

Continuation of current management would not impact air quality.

#### 4.1.9 Economics/Sociology

Continuation of current management could create negative economic and social impacts to permittees and the public with allotments not meeting health standards and in a downward trend. Continued degradation of public rangelands could eventually lead to lower livestock carrying capacities, reduced animal performance, increased chemical application costs to combat weeds, increased amounts of soil erosion, impaired water quality, ecosystems less tolerant to drought and disease and reduced amounts of soil carbon storage. Allotments meeting health standards would not be impacted by this alternative.

#### 4.1.10 Cumulative Impacts

The reissuance of grazing permits with no changes in livestock grazing management for those grazing allotments that are currently meeting the standards for rangeland health will not have cumulative impacts within the watershed area. No, impacts cumulative or otherwise have been identified with livestock grazing when the standards for rangeland health are being met.

The renewal of the grazing permits for those grazing allotments not meeting or making significant progress towards meeting the standards for rangeland health due to current livestock grazing management would have cumulative adverse impacts within the watershed area. Resources that may be impacted would include water quality, wildlife, soil, recreation, riparian and vegetation. Reduced amounts of desired native upland and riparian vegetation and increases in noxious weeds would lead to increased amounts of soil erosion, impaired water quality, reduced amounts of wildlife cover and forage and decreased recreational opportunities.

#### 4.2 Impacts Under Alternative 2, Proposed Action

The 19 grazing allotments listed in Table 4.1 have no administrative changes or proposed modifications to the terms and conditions of the current grazing permit, with the exception of the Wolff Ind. B and Antelope allotments. Their permits will have a term and condition added that requires the submission of actual use grazing records, which is an administrative action. These allotments were either meeting the standards for rangeland health, not meeting the standards, but making significant progress towards them or not meeting the standards, with current livestock grazing management not being a causal factor.

Due to the lack of proposed changes to these allotments there will be no impacts to upland/riparian health, noxious weeds, livestock grazing, rangelands,

recreation/VRM, wildlife, cultural resources, surface water, soils, air quality or economics/sociology. The allotments are either 1) in conformance with standards and guidelines for rangeland health; 2) making significant progress towards achieving standards and guidelines for rangeland health; or 3) not in compliance with standards and guidelines for rangeland health due to reasons other than current livestock management practices.

**Table 4.1**

<i>Allotment Name</i>	<i>Allotment No.</i>	<i>ID#</i>
West Crooked Creek	15128	01
Kellner Reservoir	12702	07
Kosir	02641	08
Button Butte	02599	09
Lukens Flat	02014	10
Wolff Ind. B	02513	12
Jordan Home Ranch	02012	14
Jordan East Pasture	15105	15
Mathison Place	02017	18
Money Acres	02019	22
Antelope	02508	24
Styer Antelope	02510	25
West Cr. Creek	02504	27
Styer Ind. B	02509	28
Big Crooked	02503	29
Weaver Ranch	02511	30
Hanson Dam	14904	31
Willmore	02034	32
Nine Mile Common	15037	33

There have been no impacts, cumulative or otherwise, associated with grazing permit renewal identified when these conditions are met. These allotments will not be considered in further detail.

The remaining 15 allotments listed in Table 4.2 have changes proposed that may result in impacts to resources within the watershed area. These impacts may include ground disturbance and/or wildlife displacement due to the construction of range improvement projects or impacts to vegetation and other resources due to a change in the season of grazing use or number of livestock authorized to graze the allotments. Impacts to the existing resources will be analyzed by issue for these allotments.

Table 4.2		
<i>Allotment Name</i>	<i>Allotment No.</i>	<i>ID#</i>
Chimney Crossing	12501	02
East Indian Butte Common	02001	03
Indian Butte	02008	04
Mauland/Hanson	02027	05
Heil	02633	06
Komarek	02041	11
East Antelope	15101	13
North Crooked Creek	02506	16
Maruska	02646	17
Hay Coulee	02505	19
Pitman Ranch	02514	20
Big Joe	02669	21
Sluggett Ranch	02512	23
Galloway	02516	26
Nine Mile Common	02678	34

#### 4.2.1 Rangelands/Vegetation/Livestock Grazing

The grazing allotments that are currently meeting upland, riparian and biodiversity health standards and have no grazing management changes proposed would be positively impacted. The addition of the term and condition to all grazing permits that allows for the establishment of cooperative agreements to control current and future infestations of noxious weeds will help to ensure that allotments currently meeting the standards will continue and that allotments not meeting standards due to noxious weeds may start making progress towards meeting standards. The proposed action would improve conditions on allotments not meeting the rangeland health standards due to current livestock grazing management through various types of rotational grazing systems or restricting livestock use to specified seasons of use and livestock numbers. Water development, additional fencing, salt and mineral placement, and changes in season of use would better distribute livestock and improve overall rangeland conditions. If proposed changes result in allotments making significant progress toward meeting rangeland health standards, impacts would positively benefit the permittees, the rangeland and all associated resources. If future monitoring of the allotments not currently meeting the standards indicate significant progress toward meeting standards is not occurring, the permittees, rangeland and other associated resources may continue to exist in degraded states and would not be providing the desired resource conditions the BLM is charged with maintaining for the American public, management adjustments would need to be implemented.

#### 4.2.2 Upland Health

Rangeland conditions on the allotments listed in Table 4.1 would continue to meet or make significant progress towards meeting the upland health standard. Trends on these allotments are static or improving; no major management changes would be required. Implementation of the proposed action would maintain the required upland health on these allotments. Rangeland conditions on the allotments listed in Table 4.2 vary from not meeting the standard for upland health due to current livestock grazing management, not meeting the standard not caused by current livestock management, not meeting the standard, but making significant progress towards meeting or are meeting the standard. Changes to the terms and conditions of the grazing permits are being proposed to either move the allotments towards meeting the standard or to maintain the current upland health and improve the efficiency of the current grazing operation.

Rangeland conditions on the majority of the allotments listed in Table 4.2 are not meeting the upland health standard. Trends on these allotments are static or down. Management changes and/or range improvements have been proposed by the BLM and/or the permittees. The proposed changes would lead to significant progress toward meeting the upland health standard for those allotments that are not currently meeting it. The potential impacts of these proposed actions are discussed below:

##### Chimney Crossing #12501

This allotment is currently meeting the upland health standard. The proposed changes in management for the allotment are being made to facilitate to ensure that progress is being made towards meeting the standards within the East Antelope allotment, 15101. The proposed action for this allotment calls for the grazing of the remaining portion of this allotment by yearlings after September 1. The dormant season grazing use listed in the proposed action will allow the allotment to continue to meet the rangeland health standards and would potentially allow for improved range condition through increases in desired native bunchgrasses and reduced amounts of bare ground as the allotment will be deferred from grazing until after the vegetation has completed their yearly lifecycle. There would be no impacts from the construction of the proposed fence because no ground disturbance will be authorized for the construction of the fence.

##### East Indian Butte #02001

The proposed pipeline, redistribution of salt/mineral tubs and increased riding in the areas in and around Carroll Coulee within the Cimrhakl Spring and North and South Marcott pastures would allow the allotment

to make significant progress towards meeting the standards for rangeland health. The proposed pipeline construction will lead to approximately 7.3 acres of destroyed vegetation through the proposed trenching operations. Once the pipeline has been backfilled permanent native vegetation should reestablish within 2-3 years. Minor weed infestations may occur within the disturbed site but should not persist in the long-term. Most of the pipeline route is located adjacent to existing roads or trails, the maximum amount of new two track trail that would be created would be 3 miles. Up to 12 new stock tanks will be placed on BLM lands within the allotment. These new water sources will improve livestock distribution within the North, South and Hanson Pastures. The improved livestock distribution will aid in the maintenance or improvement of the range health within the pastures and move the allotment towards meeting the standards through reduced amounts of grazing within portions of the allotment that are nearest the existing water sources. The rangelands and vegetation immediately adjacent to the new watering sources will be impacted by livestock trampling and increased amounts of grazing. The improvement in livestock distribution and the movement of all supplemental livestock salt and mineral will help to minimize these impacts. The proposed pipeline will have a net positive impact on the upland health of the allotment. The requirement to move supplemental salt and mineral tubs away from water sources and riparian habitat will ensure that the allotment is meeting the guideline for livestock grazing management #8, the other guidelines that are not currently being conformed to will be with the implementation of the grazing rotation.

#### Indian Butte #02008

There are limited opportunities to change the management on this allotment in order to make significant progress towards meeting the standard. The addition of the terms and conditions limiting the use of the allotment to times when the adjacent corrals are being used should allow for reduced amounts of utilization and increased amounts of deferment between grazing use periods. The existing native vegetation should respond with increased production and plant vigor, which should move the allotment towards meeting the upland health standard. Larger amounts of bare ground and less litter than expected may continue to exist on the allotment due to livestock handling and tractor trailer traffic associated with use of the adjacent corrals.

#### Mauland/Hanson #02027

There are no proposed changes to the grazing permit. The impacts to that would occur to this allotment under the proposed action would be caused by the installation of the proposed livestock water pipeline, which will

provide for improved livestock distribution and the allotment continuing to meet all of the standards for rangeland health. Approximately 1 acre of land will be disturbed and the vegetation destroyed to the trenching operations associated with the construction of the pipeline. The vegetation along the pipeline route will reestablish in less than 3 years. Minor infestations of weeds may occur during this time, but are not anticipated to persist.

#### Heil #02633

The changes to the livestock numbers and season of use under the proposed action will allow for continued improvement in the upland health and allow the allotment to continue to make significant progress towards meeting the standard. The season and numbers will allow for the spring and early summer use of large amounts of crested wheatgrass that exist on the allotment. Utilization levels on the native vegetation would be reduced thus allowing for increased amounts of the desired vegetation. Litter amounts will increase, reducing the amount of bare ground and the potential for excessive soil erosion.

#### Komarek #02041

The proposed terms and conditions that call for the use of the allotment during the spring and fall, outside of the hottest portion of the growing season will allow for improved production of native vegetation and increased amounts of litter, residual herbaceous vegetation and decreased amounts of bare ground. The allotment will make significant progress towards meeting the upland health standard due to the spring and fall use.

#### East Antelope #15101

The allotment is currently not meeting the upland health standard. The proposed action will result in an increase of 265 AUMs of grazing preference allocated from the Chimney Crossing allotment, 12501 and allow for the implementation of a 3 pasture deferred rotation grazing system. The implementation of the grazing rotation will improve livestock distribution and allow one pasture within the allotment to be deferred from livestock grazing until the majority of the desired cool season grass species have set seed and completed the majority of their growth. This will allow for improved plant vigor, increased amounts of litter and less bare ground, as well as increased amounts of residual herbaceous vegetation. Through the implementation of the proposed action the upland health within the allotment will be improved.

#### North Crooked Creek #02506

The proposed permit modifications to split out the pastures that are separate from the allotment management plan will allow for more efficient

administration of the grazing allotment as well allow for the implementation of the 3 pasture deferred rotation grazing system as outlined in the existing Allotment Management Plan. The implementation of the grazing rotation will improve livestock distribution and allow one pasture within the allotment to be deferred from livestock grazing until the majority of the desired cool season grass species have set seed and completed the majority of their growth. This will allow for improved plant vigor, increased amounts of litter and less bare ground, as well as increased amounts of residual herbaceous vegetation. The implementation of the proposed action will allow the allotment to make significant progress towards meeting the upland health standard. The removal of an existing allotment cross fence and the construction of a new allotment cross fence will create pastures that are more equal in size and allow for better distribution of livestock within the grazing rotation. The construction of the proposed livestock water pipeline will lead to the disturbance and direct destruction of approximately 6 acres of land and vegetation.

This vegetation that is destroyed should become reestablished within 2-3 growing seasons. Minor weed infestations may occur within the disturbed site but should not persist in the long-term. Implementation of the proposed action will also ensure that the allotment is compliance with the guidelines for livestock grazing management (Appendix C).

#### Maruska #02646

The modification of the grazing permit to reflect that the allotment consists of 3 separate pastures will improve the administrative efficiency of allotment by making the permit easier to follow regarding use supervision and billing. The authorized season and numbers will allow the allotment to maintain or improve the current range condition and will continue to meet the rangeland health standard despite the presence of large amounts of crested wheatgrass.

#### Hay Coulee #02505

The proposed action will facilitate the implementation of a 3 pasture deferred rotation grazing system for one of the permittees associated with this common allotment and will allow another portion of the allotment to be split into a new North Valentine allotment, 03198, for the other permittee. The construction of the proposed pipeline will result in the removal/destruction of less than 1 acre of vegetation associated with the trenching operation on BLM lands, as the majority of the pipeline will follow an existing two track trail. This vegetation that is destroyed and not associated with the two track trail should become reestablished within 2-3 growing seasons. Minor weed

infestations may occur within the disturbed site but should not persist in the long term. The implementation of the 3 pasture deferred grazing rotation will improve livestock distribution and allow one pasture within the allotment to be deferred from livestock grazing until the majority of the desired cool season grass species have set seed and completed the majority of their growth. This will allow for improved plant vigor, increased amounts of litter and less bare ground, as well as increased amounts of residual herbaceous vegetation. Through the implementation of the proposed action the upland health within the allotment will begin to make progress towards meeting this standard. The requirement to move supplemental salt and mineral tubs away from water sources will ensure that the allotment is meeting the guideline for livestock grazing management #8, the other guidelines that are not currently being conformed to will be with the implementation of the grazing rotation. The portion of the allotment that will be split out and renamed and authorized as a separate and new grazing allotment would begin to make significant progress towards meeting this standard, due to the season of use that will allow deferment from early spring grazing. The allotment will be dominated by deeded lands and will make up a small portion of the permittee's overall cattle operation.

#### Pitman Ranch #02514

The proposed action to suspend AUMs that are currently unavailable for livestock due the presence of a large prairie dog town will allow for improved upland conditions by recognizing the fact that the forage presently allocated is unavailable for livestock and rather than concentrating the same number of livestock on forage that is not impacted by the prairie dog town. The other term and condition that will not allow the feeding of hay adjacent to unfenced BLM lands will reduce the impact that concentrated winter use has on portions of the allotment. These areas will have increased amounts of standing residual herbaceous vegetation due to reduced amounts of trampling and grazing from cattle. Winter use will still occur at reduced levels of concentration and would allow for improved upland conditions that will allow this allotment to make progress towards meeting the upland health standard.

The requirement to move supplemental salt and mineral tubs away from water sources will ensure that the allotment is meeting the guideline for livestock grazing management #8, the other guidelines for livestock grazing management (Appendix C) that are not currently being conformed to will be achieved through the implementation of the additional terms and conditions placed on the grazing permit.

### Big Joe #02669

The proposed addition of the term and condition that defines the allotment carrying capacity based on the need of 4.4 acres of BLM lands to produce 1 AUM of forage will ensure that use levels do not exceed the forage that is available on the allotment and will move the allotment towards meeting the upland health standard through control of the number of livestock that graze the allotment. The additional term and condition that allows for the implementation of a more restrictive season and numbers authorization allows will ensure that the allotment will move towards meeting this standard if the original proposal does not.

Implementation of the proposed action will also ensure that the allotment is compliance with the guidelines for livestock grazing management (Appendix C).

### Sluggett Ranch #02512

The proposed term and condition that limits the maximum number of livestock that can graze on the BLM portion of the allotment would allow for reduced utilization levels and improved resource conditions through increased litter, residual herbaceous vegetation and decreased amounts of bare ground. The allotment will make significant progress towards meeting the upland health standard.

Implementation of the proposed action will also ensure that the allotment is compliance with the guidelines for livestock grazing management (Appendix C).

### Galloway #02516

The proposed term and condition that limits the maximum number of livestock that can graze on the BLM portion of the allotment would allow for reduced utilization levels and improved resource conditions through increased litter, residual herbaceous vegetation and decreased amounts of bare ground. The allotment will make significant progress towards meeting the upland health standard.

Implementation of the proposed action will also ensure that the allotment is compliance with the guidelines for livestock grazing management (Appendix C).

### Nine Mile Common #02678

The permittee proposed electric fence that will allow the permittee to control grazing on the BLM lands when the cattle are grazing the adjacent harvested grain fields will allow for complete rest from livestock grazing for at least a full year and potentially longer. This will allow the native vegetation to recover and complete yearly life cycles during these times. Vegetative production, litter and residual herbaceous vegetation

will increase while bare ground and the potential for soil erosion will be reduced. The allotment will make progress towards meeting the upland health standard. Implementation of the proposed action will also ensure that the allotment is compliance with the guidelines for livestock grazing management (Appendix C).

### **Noxious Weeds**

Implementation of the proposed action would initiate a comprehensive, cooperative weed control effort to systematically treat noxious weeds in the watershed area. Priorities would be established utilizing the weed categories outlined in Chapter 3. Infested acres of noxious weeds would decrease through an aggressive, concentrated effort involving all facets of an integrated weed management program.

Wildfire could lead to a temporary increase in post-burn noxious weed infestations. Canada thistle and houndstongue are particularly problematic noxious weeds following a fire event.

Variable conditions influencing noxious weeds include:

- burn severity
- survival of desired plants
- pre-burn noxious weed cover
- survival of weeds
- reproductive capability of noxious weed species
- pre-burn and post-burn soil moisture
- revegetation

Pastures would be rested for two growing seasons following a wildfire. During the grazing rest period, BLM would continue an integrated weed management program as necessary. After the livestock grazing rest period, the BLM would work with permittees in accordance with the cooperative weed control agreements.

Existing infestations of Category 1 noxious weeds would be contained and suppressed utilizing herbicides and biological control. Biological control of leafy spurge has produced very favorable results within the watershed; continual monitoring, dissemination, and new releases of biocontrol agents in addition to continued herbicide control would perpetuate a steady downward trend in leafy spurge acreage. Russian knapweed would be controlled solely with herbicides until an effective bioagent is approved and released. Assertive monitoring would assist in the prevention of new infestations of Category 1 weeds through early detection and control.

Existing infestations of Category 2 noxious weeds would be contained and suppressed or eradicated utilizing herbicides and biological control. Small, relatively new infestations would be eradicated with

herbicides. Established, larger infestations of Category 2 weeds would be contained and suppressed with herbicides and applicable biocontrol agents. Assertive monitoring and public awareness/outreach would assist in the prevention of new infestations of Category 2 weeds through early detection and eradication.

Category 3 noxious weeds have not been detected in the watershed area or may be found only in small, scattered, localized infestations. Assertive monitoring and public awareness/outreach would assist in the prevention of new infestations of Category 3 weeds through early detection and eradication.

#### **4.2.3 Recreation/ Visual Resource Management**

Public camping would continue along travel routes under the current BLM policy of 14-day length of stay, and 100 yards off the road or trail. The dispersed campsites presently located along inventoried travel routes have been found to be in good condition, but monitoring would ensure that impacts from soil compaction, vegetation damage, and trash accumulation do not occur.

The BLM could implement restrictions on the number and acreage size of the camps, as well as the number of vehicles and/or horse trailers to prevent resource impacts. BLM would close campsites if soil and vegetation resources are damaged or destroyed. This would be applicable to both private and commercial hunting groups.

Impacts to the visual resources under this alternative would include livestock developments such as stocktanks and fences. Improper placement of signs and boundary markers along travel routes could impact the visual resource as well. The LFO sign plan directs proper location and installation of all approved signs. Livestock developments when possible would be sited away from hilltops and ridges, and preferably where vegetation could screen the structures. Stocktanks located in highly visible areas would be painted using approved BLM earth tone colors.

#### **4.2.4 Wildlife**

Several different approaches to meeting standards have been described in this alternative, each designed to address the issues identified in the allotment while accommodating the needs of the individual ranching operation.

Grazing management proposals would include one or more of the following:

- The BLM and permittees would develop new upland water sources.

- The BLM and permittees would collaborate on new grazing systems to provide for the needs of vegetation, wildlife and the individual ranching operation (rest rotation is preferred if possible).
- New fence construction

Each of these methods would have a positive effect on wildlife in the watershed area. Project implementation would be designed specifically to minimize impacts to the various species of birds, mammals, fish, amphibians and reptiles known to inhabit the watershed area. Special emphasis would be placed on avoiding identified crucial winter habitats and parturition areas.

The proposed action would not negatively affect any T&E species or their associated habitat. Impacts to sage-grouse would be minimal. Each allotment not meeting the upland health standard would have some deviation in the current grazing program designed to improve rangeland health and sage-grouse habitat. Rest rotation grazing was considered in each case and implemented if possible. Alteration in the current grazing use dates or deferred rotation were outlined if rest rotation was not feasible. Regardless of the type of grazing management being applied, allotments not meeting standards in the watershed area would be monitored closely.

Black-tailed prairie dogs are present in 13 towns in the Northeast Fergus Watershed Area (Map M3); opportunities to improve their habitat are limited. Current BLM policy allowing expansion of prairie dog towns onto public land would be continued. Prairie dog towns provide habitat for mountain plovers, burrowing owls and other special status bird and mammal species.

The proposed action includes a plan to develop additional livestock water in some allotments within the watershed. Water development would be designed to relieve livestock grazing pressure on riparian areas and distribute use to lightly grazed uplands. Rest or deferred rotation grazing management would be incorporated into these allotments. At least one pasture in each of these allotments would be rested or deferred every year. Periodic rest would increase the health of the upland vegetation and provide ungrazed herbaceous vegetation for wildlife winter forage and cover for ground nesting birds. New pasture fences would be necessary to accommodate the majority of the proposed rotation grazing systems.

This alternative would implement an adaptive management approach to insure goals and objectives outlined in sections 1.4 and 1.5.4 are achieved. If management actions outlined in Alternative 2 do not move resource conditions toward these goals and objectives, changes would be made to correct the course of action. Adaptive management changes would



be implemented under the review of a biologist and interdisciplinary team. Prior to implementation of changes, a review of potential resource impacts would be conducted. Management adjustments that could adversely affect T&E species would not be implemented. Adaptive management actions that allow for adjustments such as shortening the length of the grazing period, fencing, water developments, exclosures, and alternating the rotation patterns would not negatively affect wildlife (direct or cumulatively) because they would be selected with the needs and requirement of wildlife in mind.

The allotments listed in Table 4.3 do not meet the biodiversity standard and livestock grazing is not a significant factor. The standards were not met in these allotments due to an abundance of crested wheatgrass or other non-native species.

In these specific allotments, the factors are historical and beyond the control of the current livestock grazing permittees. No specific grazing management changes or range improvements are proposed to remedy the issues. Implementation of the proposed action would not create additional impacts to wildlife resources associated with these allotments so no further analysis will be completed.

<b>Table 4.3</b>		
<i>Allotment Name</i>	<i>Allotment No.</i>	<i>ID#</i>
Kellner Reservoir	12702	07
Kosir	02641	08
Wolff Ind. B	02513	12
Hanson Dam	14904	31

Rangeland conditions on the majority of the allotments listed in Table 4.2 are not meeting the upland health, riparian or biodiversity standard. Trends on these allotments are static or down. Management changes and/or range improvements have been proposed by the BLM and/or the permittees. The proposed changes would lead to significant progress toward meeting the health standards for those allotments that are not currently meeting it. The potential impacts of these proposed actions are discussed below:

#### Chimney Crossing #12501 and East Antelope #15101

The Chimney Crossing allotment is currently meeting all of the health standards. The proposed changes in management for the allotment are being made to facilitate that progress towards meeting the standards within the East Antelope allotment. East antelope allotment is not meeting the riparian or the biodiversity standard. The proposed action is to build 2.5 miles of fence and in Chimney Crossing allotment and allocate

the grazing in one of the new pastures to the East Antelope allotment. The new grazing configuration would be a three pasture deferred grazing system in the East Antelope allotment and a single late use yearling pasture in the Chimney Crossing allotment. The proposed grazing management changes would benefit wildlife in the area. The grazing deferment would improve both the riparian and the upland vegetation. Antelope and elk would have a reliable source of forage near Crooked Crook. Sage-grouse and other ground nesting birds would have much better riparian cover during brooding months and residual herbaceous nesting cover in the spring months.

#### East Indian Butte #02001

This allotment is not meeting the upland, riparian or biodiversity standard. East Indian Butte is some of the most important elk and mule deer habitat in the watershed area. The proposal would be to construct a new water pipeline from the Marcott coulee well as described in the Marcott Coulee Allotment Management Plan of 1990. The pipeline would provide water to 12 new stock water troughs. Permittees that graze in the east pasture drained by Carter Coulee would be required to ride and push any livestock within the riparian habitat at least ½ miles away. The salt/mineral tubs would be moved to upland sites away from all riparian habitats. The construction of this pipeline would allow for the improved distribution of livestock within the Marcott Coulee pastures of this allotment and will allow for the more reliable implementation of the 4 pasture deferred rotation grazing system that is currently in place on the Marcott Coulee pastures of this allotment and Mauland/Hanson Allotment, 02027. The grazing deferment would improve both the riparian and the upland vegetation. Pastures scheduled for deferment would provide residual grass for elk winter forage and sage grouse spring nesting cover.

#### Indian Butte #02008

This allotment does not meet the upland or biodiversity standard. This allotment is very small and adjacent to a set of corrals on state land. The small parcel of BLM has not provided much wildlife habitat for many years and probably would not as long as the corrals are in place. The proposal would be to only graze the BLM parcel during the short time that the corrals are being used. Less grazing on the parcel would provide some residual forage for wildlife. This small parcel of isolated BLM land would not be critical to the overall wildlife habitat in the watershed area.

#### Mauland/Hanson #02027

This allotment is currently meeting the upland and biodiversity standards. Livestock water is currently

very limited in this allotment so it receives little grazing use. The proposal is to provide two stocktanks in this allotment from the proposed Marcott Well pipeline. The construction of this pipeline would allow for the improved distribution of livestock and for the more reliable implementation of the 4 pasture deferred rotation grazing system that is currently in place on this allotment and the Marcott Coulee pastures of the East Indian Butte Common Allotment, 02001. Rotation grazing in the Mauland/Hanson allotment would benefit the desired native vegetation in this allotment and the other pastures in the rotation. Deferred rotation would provide healthier and more of the desired bunch grasses for elk forage.

#### Heil #02633

This allotment is not meeting the upland or biodiversity standard but significant progress is being made towards meeting those standards. Changes would be made to graze earlier and less time with more cattle. The season and numbers will allow for the spring and early summer use of large amounts of crested wheatgrass that exist on the allotment. Utilization levels on the native vegetation would be reduced thus allowing for increased amounts of the desired vegetation. The proposed changes would promote better sage-grouse nesting habitat on this allotment.

#### Komarek #02041

This allotment is not meeting the upland or the biodiversity standard. The proposed terms and conditions that call for the use of the allotment during the spring and fall, outside of the hottest portion of the growing season would allow for improved production of native vegetation. This allotment is important elk habitat and the proposed action would provide for some additional elk forage.

#### North Crooked Creek #02506

This allotment is not meeting the upland, riparian or biodiversity standards. This allotment has the potential to be some of the best sage-grouse and antelope habitat in the watershed area. The proposal is to build 1.9 miles of new allotment cross fence and remove an old fence that is not effective. This action would create pastures that are more equal in size. The proposed action also includes a 6 mile long water pipeline from the Marcott Coulee well which would provide livestock water to 4 tanks in two different pastures. These proposals would facilitate the proper implementation of the three pasture deferred rotation grazing system that is described in the North Crooked Creek allotment management Plan. The implementation of the grazing rotation will improve livestock distribution and allow one pasture within the allotment to be deferred from livestock grazing until the desired cool season grass

species have set seed and completed the majority of their growth. The improved vegetative condition would provide better antelope forage and better brooding and nesting cover for sage-grouse particularly in the pasture which has been deferred from grazing.

#### Maruska #02646

This allotment is not meeting the biodiversity standard primarily because of the abundance of crested wheatgrass. This area is important sage-grouse habitat and there are active leks in the area. There are currently no proposals in this allotment specifically to improve the grouse nesting habitat. This allotment will be monitored closely during annual spring lek counts. If problems are encountered with insufficient nesting cover corrective action would be taken. Rotational grazing or temporary fencing to concentrate livestock use on crested wheatgrass would be considered. Removal of debris from the around the stock dams would benefit waterfowl and other wildlife that use the reservoirs.

#### Hay Coulee #02505

This allotment is not meeting the upland or the biodiversity standard. This allotment is valuable elk and mule deer habitat. The BLM proposes to implement a three pasture deferred rotation grazing system as outlined as an alternative grazing schedule in the existing allotment management plan. The allotment would be split with a new allotment being created, thus eliminating the current common allotment. The splitting of this common allotment would require several range improvements projects that will include fence removal (1.2 miles), new fence construction (6.2 miles) and extension of a livestock water pipeline (1 mile). The implementation of the 3 pasture deferred grazing rotation will improve livestock distribution and allow one pasture within the allotment to be deferred from livestock grazing until the majority of the desired cool season grass species have set seed and completed growth. The proposed deferred rotation grazing would provide for more and better forage for elk and mule deer on this allotment.

#### Pitman Ranch #02514

This allotment is not meeting the upland or biodiversity standard. This allotment includes a large black-tailed prairie dog town and some small pieces of elk habitat. Twenty-three AUMs would be placed in suspension due to the presence of the prairie dog town. The proposed action to suspend AUMs that are currently unavailable for livestock would allow for improved upland conditions. The proposed action would also include a stipulation to not allow the feeding of hay adjacent to unfenced BLM lands. This stipulation would reduce the impact that concentrated winter use

has on portions of the allotment. These areas will have increased amounts of standing residual herbaceous vegetation due to reduced amounts of trampling and grazing from cattle. These proposals would improve the forage availability for elk and mule deer.

#### Big Joe #02669

This allotment is not meeting the upland or the biodiversity standard. This area is important sage-grouse habitat, with at least one active lek in the vicinity. The proposed addition of the term and condition that defines the allotment carrying capacity would ensure that use levels do not exceed the forage that is available. There would be an additional term and condition that allows for the implementation of a more restrictive season and numbers if the original proposal does not work. This allotment will be monitored closely during annual spring lek counts. If problems are encountered with insufficient nesting cover corrective action would be taken.

#### Sluggett Ranch #02512

This allotment does not meet the upland or the biodiversity standard. This allotment includes some elk and mule deer habitat and some marginal sage-grouse habitat on the west end. The proposed term and condition that limits the maximum number of livestock that can graze on the BLM portion of the allotment would allow for reduced utilization levels and improved resource conditions. Reduced utilization would provide for better elk and deer forage and residual cover for ground nesting birds.

#### Galloway #02516

This allotment does not meet the upland or the biodiversity standard. The allotment includes some valuable sage-grouse habitat and there is at least one grouse lek in the vicinity. The proposed term and condition that limits the maximum number of livestock that can graze on the BLM portion of the allotment would allow for reduced utilization levels and improved resource conditions. Reduced utilization would provide for more residual herbaceous cover for sage-grouse nesting. This allotment will be monitored closely during annual spring lek counts. If problems are encountered with insufficient nesting cover corrective action would be taken.

#### Nine Mile Common #02678

This allotment does not meet the biodiversity standard primarily because of the abundance of non-native crested wheatgrass. There is an active sage-grouse lek adjacent to this parcel. The permittee proposed electric fence that would allow the permittee to control grazing on the BLM lands when the cattle are grazing the

adjacent harvested grain fields. This proposal would allow for complete rest from livestock grazing for at least a full year and potentially longer. This would allow the native vegetation to recover and complete yearly life cycles during these times. This proposal would provide for abundant herbaceous cover for sage-grouse nesting.

### **4.2.5 Cultural Resources**

Effects from grazing practices would be the same as identified in Alternative 1 for the nineteen allotments with no proposed changes. Season of use changes in other analysis areas in the Lewistown Field Office have not been shown to affect cultural resources.

Some minor beneficial impacts could result from management actions that reduce erosion. Proposed surface disturbing activities, especially water developments at springs and other water sources could create negative impacts if mitigation were not incorporated into project designs. A file search and/or Class III cultural resource inventory would be conducted prior to all surface disturbance actions proposed in this watershed plan to determine the presence of historic properties within the proposed areas of potential effects. Possible benefits could include identification of additional resources during inventories.

Proposed range improvement projects in two allotments (Mauland/Hanson 02027 and North Crooked Creek 02506) have the potential to affect cultural resources. Nine historic and prehistoric cultural sites have been identified either within the area of potential effect (APE) or in close proximity to the proposed development sites. These sites were recorded – but not evaluated – as part of the 1977 Class II Inventory associated with the South Missouri Breaks-Musselshell Range EIS.

As specific project designs are developed the number of sites that could potentially be affected is expected to decrease. Excavation associated with pipeline installation, and concentrated cattle impacts on prehistoric sites with stock tank placement have the greatest potential to affect sites. Since all of the proposed improvements would be new construction, all will be reviewed as described in the previous paragraph. If a conflict were to exist between the proposed action and the presence of cultural resources, mitigation measures would be factored into the project's design. Such measures could include complete documentation of the site to exhaust its information potential, evaluating the site and making a determination that the site is not eligible for inclusion on the National Register of Historic Places, avoiding the site through project redesign, or implementing protective measures to prevent impacts to the

characteristics of the site that make the site eligible. Such measures could include installing fences or barriers to protect sites, placing mats or other pads to prevent erosion or soil compaction if a site needed to be crossed, or installing sections of jack-leg fence in areas where subsurface disturbance would be a concern.

#### 4.2.6 Riparian/Hydrology

Rangeland conditions on the allotments listed in Table 4.4 are currently not meeting the riparian health standard; livestock grazing is a significant factor. Trends on these allotments are static or degrading. Management changes have been proposed by the BLM and permittees to improve riparian area health and grazing operation productivity. Riparian areas would benefit from the proposed changes by significantly progressing toward proper functioning condition.

Table 4.4		
<i>Allotment Name</i>	<i>Allotment No.</i>	<i>ID#</i>
East Indian Butte Common	02001	03
East Antelope	15101	13
North Crooked Creek	02506	16
Mathison Place	02017	18

The allotment listed in Table 4.5 is currently meeting the riparian health standard or making significant progress. However, changes are proposed under this alternative that may affect riparian and water resources within the allotment.

Table 4.5		
<i>Allotment Name</i>	<i>Allotment No.</i>	<i>ID#</i>
Chimney Crossing	12501	02

#### East Indian Butte Common #02001

Under this alternative, salt/mineral tubs would be required to be moved from all riparian areas, coulee bottoms, and water developments. Riders would be required to push livestock out of riparian areas to allow for occasional rest. This would lead to a small improvement in the condition of vegetation, which would aid in sediment trapping and floodplain formation. A small improvement in physical function would be expected.

Extending a pipeline from the Marcott Coulee well in the Marcott Coulee North and South pastures of this allotment and Mauland/Hanson allotment (#02027) would facilitate operation of a four pasture deferred rotation grazing system. This would increase the rate of improvement on Marcott Coulee and facilitate increases in vegetative cover of upland and riparian areas.

#### East Antelope #15101

The East Antelope allotment would be expanded and have a portion of what is now the Chimney Crossing allotment (#12501) allocated to it. A three pasture rotation grazing system would be implemented. This action would facilitate improvement on Antelope Creek and maintain riparian function on Crooked Creek. Increases in vegetative cover on Antelope Creek would aid in decreasing width/depth ratios and improving stream channel function.

#### North Crooked Creek #02506

A pipeline and tanks would be extended from Marcott Coulee well, and the three pasture rotation found in the North Crooked Creek AMP would be implemented. The combination of off-site water and pasture rotation would decrease livestock use on Crooked Creek. Willow species would have a greater opportunity for regeneration. Streambank vegetative cover would improve, and disturbance-caused, undesirable, herbaceous species would decrease.

#### Mathison Place #02017

Under this alternative, salt/mineral tubs would be required to be moved from all riparian areas, coulee bottoms, and water developments. Riders would be required to push livestock out of riparian areas to allow for occasional rest. This would lead to a small improvement in the condition of vegetation, which would aid in sediment trapping and floodplain formation. A small improvement in physical function would be expected.

#### Chimney Crossing #12501

The Chimney Crossing allotment would be included in a three pasture rotational grazing system with the East Antelope (#15101) allotment. This action would facilitate improvement on Antelope Creek and maintain riparian function on Crooked Creek. Increases in vegetative cover on Antelope Creek would aid in decreasing width/depth ratios and improving stream channel function.

In general, this alternative would improve plant cover and increase infiltration rates, thereby increasing the time of concentration and the quantity of water stored on the BLM lands within the watershed area.

Water quantity and quality affected by flow diversion, impoundments, and stream channel modifications would not change. Any impacts to surface water from the range improvement projects would be immeasurable.

Under the proposed action, pipeline extensions and additional stock tanks would be installed within the

watershed area in the North Crooked Creek, East Indian Butte (Marcott Coulee North/South pastures) and Mauland/Hanson allotments. The pipeline extensions and stock tanks would be fed from Marcott Coulee well. This would cause a small increase in consumption of groundwater from the Eagle Formation. All stock tanks would be installed according to BLM specifications with flow control devices to minimize impacts to the shallow ground water aquifers.

#### 4.2.7 Soils

Grazing management changes which result in allotments making significant progress toward meeting rangeland health standards would create a positive impact to soils in the watershed area. Rangelands meeting or exceeding health standards exhibit a higher percentage of increaser forage species, fewer annual grasses and forbs, increased plant vigor and root mass, a decrease in the percentage of bare ground, and an increase in available water holding capacity and infiltration. These characteristics greatly benefit rangeland soils.

Table 4.6 is a summary of proposed range improvement projects under Alternative 2

<b>Table 4.6</b>	
<b><i>Proposed Project</i></b>	<b><i>Total Affected Area</i></b>
4-wire barbed wire fence	5.5 miles (~0.7 acres)
3-wire barbed wire fence	5.1 miles (~0.6 acres)
2-wire (high tensile) electric fence	0.5 miles
Barbed wire fence removal	2.7 miles (~0.3 acres)
Stockwater pipeline	20 miles (~20 acres)
Stocktanks (19)	Less than ½ an acre

The cumulative impact of these proposed projects would have an effect on the soil resource, though it would be minimal. The large area encompassed by the watershed and mitigation measures associated with each of the projects would minimize or eliminate negative impacts. The proposed projects are spread among the 34 allotments and 308,622 total acres.

Soil could be affected by implementation of this alternative in two ways, surface disturbances and compaction. Spillage of equipment lubricants, fluids, and fuels could also adversely impact soils associated with the range improvement projects.

Construction equipment and vehicular traffic associated with the proposed projects would cause soil compaction; severity would be directly related to soil type, frequency, and weight (lbs./sq. inch) of equipment. Compaction alters soil structure -

decreasing porosity, infiltration rate, air space, and available water holding capacity. A combination of these factors would decrease the vegetative capacity and increase the potential for water and wind erosion of affected areas. Mitigation would include limitation of unnecessary traffic associated with the projects and limitation of traffic during wet periods. Excessively wet soils would be defined as soil moisture high enough to:

- foul blades, augers or equipment
- create 3" deep ruts
- conglomerate mud on tires and tracks

Construction and farm equipment and vehicular traffic associated with the proposed projects would also create surface disturbances which could lead to accelerated wind and/or water erosion. Mitigation would include timely rehabilitation of all project-induced surface disturbances as directed by the authorized officer. All seed mixes would be recommended and approved by the authorized officer. Seed would be State of Montana Certified or Registered seed (or certified/registered by the state of origin); certification tags would be made available to the authorized officer for inspection before the seed is planted. Seed would be planted using a disc drill equipped with depth bands (or a suitable depth regulator to ensure proper depth of planting) and packer wheels. Seed would be drilled between one half inch (1/2") and three quarters inches (3/4") deep. Where drilling is not possible, seed would be broadcast and the area would be harrowed or raked to cover the seed. Care would be exercised to prevent burying the seed deeper than one inch (1"). If seed must be broadcast, the drill seeding rate provided by the authorized officer would be doubled. The seeding would be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth would not be made before completion of the first growing season following seeding. Seeding would be completed in the late fall/early winter or early spring between the dates of 10/15 and 05/15. Seedings would not be made when the soil is frozen or snow covered. If moisture conditions are favorable in late summer, seeding may be completed between 08/15 and 09/15, allowing a minimum of 45 days for germination and seedling development before the seedlings go dormant. Late summer plantings should be attempted only when soil moisture is adequate at or very near the surface and to a substantial depth in the profile.

Silt fences would be properly installed to control offsite movement of any required soil stockpiles in areas with slopes greater than 15%, and adjacent to waterways and stream channels. Topsoil would not be used as padding in trenches or for any other use as a construction material. Standard erosion control practices would be employed to minimize erosion during construction operations. If a high groundwater table is encountered

requiring dewatering, water would be pumped and discharged in a manner that would minimize sedimentation and prevent off-site erosion and bottom scour in adjacent waterways. Discharge to the surface would be allowable if vegetation is adequate to effectively function as a filter medium. If vegetation is inadequate, bale filters or other appropriate measures would be used to limit siltation.

Drainage control structures would be used to:

- transport surface runoff across disturbed areas with minimal erosion
- direct surface drainage away from disturbed areas
- provide downgradient control of runoff and sediment from all disturbed areas

These structures include drainage channels and water bars. Water bars would be used to direct intercepted runoff away from disturbed areas. Spacing intervals would be:

<u>Slope Gradient %</u>	<u>Typical Spacing (ft)</u>
5 - 15	150
16-30	100
Greater than 30	75

Soils could also be impacted by fluid spills, including engine oil, hydraulic oil, gear lube, anti-freeze, and fuel (gasoline or diesel fuel). These spills could severely affect soil in localized areas; concentrations may be capable of soil sterilization. Mitigation would include removal and approved disposal of soil from localized spill areas followed by replacement with clean soil and rehabilitation as directed by the authorized officer. Equipment leaks and drips would be fixed immediately upon discovery by the contractor, permittee, or BLM personnel.

All barbed wire fence construction would utilize steel T posts and wooden set posts at corners, stress panels and fence breaks. Wheeled equipment may be used to install the posts and wire creating a short-term impact on vegetation and soils adjacent to the fence alignment. New roads or trails would not be initiated along proposed fence routes, though permittees would be authorized to travel adjacent to fences for maintenance purposes. New fences would alter traditional livestock movement patterns and could create trailing along alignments. Minimal impacts to soils if trailing occurs would be concentrated to the linear fence routes.

All proposed stockwater pipelines would be installed utilizing rotary chain trenchers or backhoes/tracked excavators if rocky areas are encountered. Rotary trenchers create a surface disturbance only 6-12" wide, minimizing soil disturbance and potential negative impacts. The disturbance created by the backhoe/excavators would depend on the extent of the

rocky areas encountered. Trenches would be backfilled immediately upon pipe installation and pressure test completion. Reseeding of the backfilled trenches is generally not required due to the low level of surface disturbance and natural encroachment of adjacent vegetation. Stocktank installation associated with proposed pipeline construction projects would impact soils. The small footprint required during the construction phase (20' x 20') would minimize short-term impacts. Long-term impacts would result from concentrated livestock use around the stocktanks and associated trailing to and from the water source. Mitigation would include proper tank placement relative to resource concerns and livestock grazing management objectives. Stocktanks would not be placed on narrow ridges, in confined spaces or corridors, in riparian areas, or on slopes greater than 5%.

## 4.2.8 Air Quality

The construction of the proposed range improvement projects will lead to short-term increases in particulate matter from engine exhaust and soil disturbance. Upon completion of construction these impacts will cease. The improved livestock grazing management that will occur with the implementation of the proposed action should allow for improved air quality over time through increased amounts of vegetation and reduced amounts of bare ground.

## 4.2.9 Economics/Sociology

Implementation of alternative will allow improve or maintain the health of the public lands and therefore have a positive impact on the quality of life for all citizens by providing clean water and air, and healthy public lands that provide for multiple uses. The western and ranching lifestyle will be maintained within Fergus County as livestock grazing and recreational opportunities will continue to occur on the public lands within the watershed area. The proposed action may create a short-term economic impact for permittees with allotments not meeting rangeland health standards. The BLM would require grazing management changes or range improvements to meet upland, riparian and/or the biodiversity health standards. The Permittees would be responsible for some costs associated with most of the proposed range improvement projects. In the long term, however, proposed changes would lead to healthy rangelands and sustainable livestock grazing. There would be no economic impacts to permittees that do not have changes proposed to their grazing permits.

## 4.2.10 Cumulative Impacts

The renewal of grazing permits with no changes in livestock grazing management for those grazing

allotments that are currently meeting the standards for rangeland health will not have adverse cumulative impacts within the watershed area. No impacts, cumulative or otherwise, have been identified with livestock grazing when the standards for rangeland health are being met.

The renewal of grazing permits with modifications to the terms and conditions and/or the implementation of range improvement projects for allotments not currently meeting or making significant progress towards meeting the standards due to current livestock grazing management will result in overall positive impacts to the resources within the watershed area. The improved livestock grazing management will enable the grazing allotments to make progress towards or meet the rangeland health standards, which will benefit the resources within the watershed area. The adverse impacts that may occur would be associated with the construction and implementation of the range improvement projects requiring the use of large equipment. The use of equipment would have short-term adverse impacts to soil, vegetation and wildlife (during periods of equipment operation) resources, though it would be minimal. The use of the equipment will lead to small areas of mild soil compaction, bare

ground, crushed and destroyed vegetation and displaced wildlife populations. These impacts will be short-term as the damaged or destroyed vegetation will reestablish within 2-3 years and wildlife will move back into the project areas after project construction is complete. The large area encompassed by the watershed and mitigation measures associated with each of the projects would minimize or eliminate negative impacts.

Any future actions regarding grazing permit renewals and livestock grazing management will be similar to what was described in the proposed action and would have similar cumulative impacts. The current amount of other activities permitted or pending approval within the watershed area are limited in scope. It is reasonably foreseeable that the major activity occurring on public and private lands within of the watershed area will continue to be livestock grazing. There has been some sub-division of private lands, which may continue on a limited basis. Impacts from these activities include the construction of infrastructure and rights-of-way grants associated with this construction. The impacts to resources would be similar to what was described above and most of this activity would occur on private lands.





## Chapter 5

### Consultation and Coordination

The Northeast Fergus Grazing Permit Renewal EA was prepared by a BLM interdisciplinary team including:

- Adam Carr, Team Leader/Rangeland Management Specialist
- Vinita Shea, Rangeland Management Specialist
- Fred Roberts, Wildlife Biologist
- Chad Krause, Hydrologist
- Zane Fulbright, Archaeologist
- Lowell Hassler, Natural Resource Specialist - Weed coordinator
- Dan Frank, Cartographic Technician
- Betty Westburg, Range Technician
- Rod Sanders, Recreation Specialist
- Dan Brunkhorst, Rangeland Management Specialist

Other BLM personnel who provided assistance:

- Craig Flentie, Public Affairs Specialist
- Jerry Majerus, NEPA Coordinator
- Willy Frank, Assistant Field Manager, Resources
- Kay Haight, Editorial Assistant
- Loyd Bantz, Civil Engineering Technician
- Mike Barrick, Range Technician
- Debbie Tucek, Realty Specialist

Other agencies and interested parties involved in or notified during the planning process:

- Tom Stivers, Anne Tews and Gary Bertelloti – Montana Fish, Wildlife and Parks
- Clive Rooney, Montana Department of Natural Resources and Conservation

- Barron Crawford, U.S. Fish and Wildlife Service – CMR National Wildlife Refuge
- U.S. Department of Agriculture – Natural Resources Conservation Service
- Fergus County Commission
- Petroleum County Commission
- Montana Grass Conservation Commission
- Crooked Creek Cooperative State Grazing District
- Winnett Cooperative State Grazing District
- Grass Range Cooperative State Grazing District
- Central Montana Resource Advisory Council

All grazing permittees were contacted by mail or phone during the planning process. The BLM met with all permittees whose allotments were not meeting one or more of the rangeland health standards. A public meeting was held Tuesday, March 11, 2008 at the public school in Roy, Montana.

The BLM frequently receives inquiries from organizations, individuals and media for information about grazing permits and permittees. These inquiries are treated as Freedom of Information Act requests. Doing so allows the BLM to provide consistent responses and to comply with a Privacy Act notice that covers grazing permits. The names of livestock grazing permittees will not be used in planning documents. This plan is keyed to a numerical system and each permittee was informed, by letter, of which number refers to his/her allotment(s). The permitted use in animal unit months (AUMs) applies only to public land administered by the BLM.



# Appendix A

## Standards for Rangeland Health

Standards are statements of physical and biological condition or degree of function required for health sustainable rangelands. Achieving or making significant and measurable progress towards these functions and conditions is required of all uses of public rangelands. Historical data, when available, should be used when assessing progress towards these standards.

### Standard #1: Uplands Are In Proper Functioning Condition

This means that soils are stable and provide for capture, storage and safe release of water appropriate to soil type, climate and landform. The amount and distribution of ground cover (i.e., litter, live and standing dead vegetation, microbotic crusts, and rock/gravel) for identified ecological site(s) or soil-plant associations are appropriate for soil stability.

Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface scaling and compaction layers below the soil surface is minimal. Ecological processes including hydrologic cycle, nutrient cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

#### Physical Environment

- erosional flow patterns
- surface litter
- soil movement by water and wind
- soil crusting and surface sealing
- compaction layer
- rills
- gullies

#### Biotic Environment

- cover distribution
- community richness
- community structure
- exotic plants
- plant status
- seed production
- recruitment
- nutrient cycle

### Standard #2: Riparian and Wetland Areas Are In Proper Functioning Condition

This means that the functioning condition of riparian-wetland areas is a result of the interaction among geology, soil, water and vegetation.

Riparian-wetland areas are functioning properly when adequate vegetation, landform or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood water retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for native fish production, waterfowl breeding, and other uses appropriate for the area that will support greater species richness.

The riparian-wetland vegetation is a mosaic of species richness and community structure serving to control erosion, shade water, provide thermal protection, filter sediment, aid floodplain development, dissipate energy, delay flood water, and increase recharge of groundwater where appropriate to landform.

The stream channels and flood plain dissipate energy of high water flows and transport sediment appropriate for the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity), climate, and landform.

Soils support appropriate riparian-wetland vegetation, allowing water movement, filtering sediment, and slowing ground water movement for later release. Stream channels are not entrenching beyond natural climatic variations and water levels maintain appropriate riparian-wetland species.

Riparian areas are defined as land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

#### **Hydrologic**

- floodplain inundated in relatively frequent events (1-3 years)
- amount of altered streambanks
- sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region); and upland watershed not contributing to riparian degradation

#### **Erosion/Deposition**

- plain and channel characteristics; i.e., rocks, coarse and/or woody debris adequate to dissipate energy
- point bars are being created and older point bars are being vegetated
- lateral stream movement is associated with natural sinuosity
- system is vertically stable
- stream is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

#### **Vegetation**

- reproductive and diverse age class of vegetation
- diverse composition of vegetation
- species present indicate maintenance of riparian soil moisture characteristics
- streambank vegetation is comprised of those plants or plant communities that have deep binding root masses capable of withstanding high streamflow events
- utilization of trees and shrubs
- riparian plants exhibit high vigor
- adequate vegetative cover present to protect banks and dissipate energy during high flows
- where appropriate, plant communities in the riparian area are an adequate source of woody debris

### **Standard #3: Water Quality Meets Montana State Standards**

This means that surface and ground water on public lands fully support designated beneficial uses described in the Montana Water Quality Standards. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- dissolved oxygen concentration
- pH
- turbidity
- temperature
- fecal coliform
- sediment
- color
- toxins
- others: ammonia, barium, boron, chlorides, chromium, cyanide, endosulfan, lindane, nitrates, phenols, phosphorus, sodium, sulfates, etc.

#### **Standard #4: Air Quality Meets Montana State Standards**

This means that air quality on public lands helps meet the goals set out in the State of Montana Air Quality Implementation Plan. Efforts will be made to limit unnecessary emissions from existing and new point or non-point sources.

The BLM management actions or use authorizations do not contribute to air pollution that violates the quantitative or narrative Montana Air Quality Standards or contributes to deterioration of air quality in selected class area.

As indicated by:

Section 176(c) Clean Air Act which states that activities of all federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:

- cause or contribute to any violations of ambient air quality standards
- increase the frequency of any existing violations
- impede the State's progress in meeting their air quality goals

#### **Standard #5: Habitats are provided to maintain healthy, productive and diverse populations of native plant and animal species, including special status species (federally threatened, endangered, candidate or Montana species of special concern as defined in BLM Manual 6840, Special Status Species Management).**

This means that native plant and animal communities will be maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant lifeforms. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Management for indigenous vegetation and animals is a priority. Ecological processes including hydrologic cycle, and energy flow, and plant succession are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential, and there is a diversity of plant and animal species characteristic of and appropriate to the site. The environment contains components necessary to support viable populations of a sensitive/threatened and endangered species in a given area relative to site potential. Viable populations are wildlife or plant populations that contain an adequate number of reproductive individuals distributed on the landscape to ensure the long-term existence of the species. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- plants and animals are diverse, vigorous and reproducing satisfactorily noxious weeds are absent or insignificant in the overall plant community
- spatial distribution of species is suitable to ensure reproductive capability and recovery
- a variety of age classes are present
- connectivity of habitat or presence of corridors prevents habitat fragmentation
- species richness (including plants, animals, insects and microbes) are represented
- plant communities in a variety of successional stages are represented across the landscape



## Appendix B

### Land Use Plan Guidance

- **Energy Mineral Resources:** No surface occupancy restrictions will be used to protect critical paleontology sites and archeology sites. Seasonal and distance restrictions will be included in oil and gas leases to mitigate impacts to wildlife habitat (**JVP**).
- **Non-energy Mineral Resources:** Federal minerals are available for exploration and development unless withdrawn (**JVP**).
- **Paleontology:** Major paleontological resources of scientific interest will be protected (**JVP**).
- **Soils:** Soil productivity will be maintained or improved by increasing vegetation cover and reducing erosion (**JVP, Standards and Guidelines**).
- **Water Resource Management:** Surface and ground water quality will be maintained to meet or exceed state and federal water quality standards (**JVP, Standards and Guidelines**).
- **Vegetation Management:** The ecological status will be improved or maintained to achieve a plant community of good (late seral) to excellent (potential natural community) on 80% of the public lands within 15 years of implementation of activity plans (**JVP**).

Public lands that are in satisfactory (good and excellent) ecological condition will be maintained. Public lands with unsatisfactory (poor and fair) ecological condition will be managed according to multiple use objectives based on ecological site potential for specific uses (**Standards and Guidelines**).

About 40% of the vegetation will continue to be allocated to livestock grazing and about 60% will continue to be allocated to watershed protection and wildlife forage and cover (**JVP**).

The quality and quantity of summer wildlife forage will be improved by improving the reproduction and availability of palatable forbs for deer and antelope. Deer and antelope winter range (especially woody species) will be maintained and/or improved. Existing sagebrush stands will be maintained at a canopy cover of 15 to 50% with an effective height over 12 inches (**JVP, Standards and Guidelines**).

The quality and quantity of nesting, brood rearing and winter habitat for upland game birds and waterfowl nesting habitat will be improved by providing residual upland grass and forb cover (**JVP, Standards and Guidelines**).

Land will be managed for succulent vegetation production, including a variety of forbs, and big and silver sagebrush will be maintained on sage grouse wintering and nesting areas with a canopy coverage of 15 to 50% and an effective height of 12 inches. Woody vegetation will be maintained or improved for sharp-tailed grouse cover (**JVP, Standards and Guidelines**).

- **Riparian and Wetland Management:** Riparian-wetland areas will be maintained or improved based on proper functioning condition and desired plant community. Riparian-wetland objectives will be initially accomplished through livestock grazing methods at current stocking levels. If grazing methods are not successful in meeting management objectives, necessary actions will be taken to meet those objectives (**JVP, Standards and Guidelines**).

All manageable riparian areas will have management plans implemented to maintain, restore or improve riparian areas to achieve a healthy and productive ecological condition for maximum long-term benefits and values (**Standards and Guidelines**).

- **Land Treatments:** Land treatments will be used to meet watershed, grazing management and wildlife objectives but will be applied only where grazing management alone will not accomplish the desired result (**JVP**).
- **Noxious Plants:** Noxious plants will be controlled or eradicated through integrated pest management in order to maintain native rangelands (**JVP, Standards and Guidelines**).

- **Wildlife and Fisheries Management:** Suitable habitat for all wildlife species will be maintained or enhanced. The emphasis for habitat maintenance and development will be on present and potential habitat for sensitive, threatened and/or endangered species, nesting waterfowl, crucial wildlife winter ranges, non-game habitat and fisheries (**JVP, Standards and Guidelines**).
- **Prairie Dog Management:** Prairie dog towns will be maintained or managed based on the values or problems encountered (**JVP**).
- **Elk and Bighorn Sheep Management:** Habitat will be provided for elk in the Musselshell Breaks consistent with the MT Dept of FWP Elk Management Plan. (**JVP**).
- **Recreation:** The recreational quality of public land and resources will be maintained and/or enhanced to ensure enjoyable recreational experiences. Recreation emphasis will be to develop and maintain opportunities for dispersed recreational activities such as hunting, scenic and wildlife viewing and driving for pleasure (**JVP**).
- **Off-Highway Vehicle Use:** BLM will restrict OHV use on BLM land year-long or seasonally to designated roads and trails or close specific areas to protect resource values, i.e., protect vegetation and soils to maintain watersheds and water quality, reduce user conflicts, and reduce harassment of wildlife and provide habitat security. (**JVP**).
- **Visual Resource Management:** Activities will be managed to comply with VRM policies (**JVP**).
- **Cultural:** Cultural resources will be properly managed through a systematic program of identification and evaluation. The level of conflict between cultural resources and other land and resource uses will be reduced in compliance with existing laws/regulations (**JVP**).
- **Fire Management:** Fire will be managed in the manner most cost effective and responsive to resource management objectives (**JVP**).

Prescribed fire will be utilized only under specific conditions and may be administered on an individual basis in grassland, sagebrush and/or conifer types to improve wildlife habitat and vegetation production (**JVP**).

Intensive suppression of wildfire will be applied to areas with high resource values, improvements, recreation sites, administrative sites, sagebrush and juniper, fire sensitive woody riparian species, and/or cultural values and may also be used to prevent fire from spreading to adjoining private property and structures (**JVP**).

Conditional suppression will be applied to areas with low resource values or to areas not warranting intensive suppression actions and costs. Conditional suppression actions will be used in grass/shrub fuel types, Missouri Breaks fuel types and mountain timber fuel types (**JVP**).

- **Forest Management:** Minor forest products may be harvested from the Breaks on a selected sustained yield basis with wildlife habitat objectives in mind (**JVP**).
- **Lands:** Resource values will be protected or enhanced when considering applications or requests for Rights of Ways, leases and permits. Acquisitions will be pursued as opportunities arise through exchange or purchase with willing proponents and/or sellers (**JVP**).
- **Access to BLM Land:** Access will be pursued to BLM land where no legal public access exists or where additional access to major blocks of BLM land is needed (**JVP**).
- **Signage:** Appropriate signs and posters will be used to promote safety and convenience for visitors and users, define boundaries, identify management practices, provide information about geographic and historic features and protect vulnerable land areas and resources from misuse (**JVP**).



## Appendix C

### Guidelines for Livestock Grazing Management

**Guideline #1:** Grazing will be managed in a manner that will maintain the proper balance between soils, water, and vegetation over time. This balance varies with location and management objectives, historic use, and natural fluctuations, but acceptable levels of use can be developed that are compatible with resource objectives.

**Guideline #2:** Manage grazing to maintain watershed vegetation, species richness, and flood plain function. Maintain riparian vegetative cover and structure to trap and hold sediments during run-off events to build streambanks, recharge aquifers, and dissipate flood energy. Grazing management should promote deep-rooted herbaceous vegetation to enhance streambank stability. Where non-native species are contributing to proper functioning conditions, they are acceptable. Where potential for palatable woody shrub species (willows, dogwood, etc.) exists, promote their growth and expansion within riparian zones.

**Guideline #3:** Pastures and allotments will be managed based on their sensitivity and suitability for livestock grazing. Where determinations have not been previously documented, suitability for grazing will be determined by: topography, slope, distance from water, vegetation habitat types, and soil types must be considered when determining grazing suitability. Unsuitable areas should be excluded from grazing.

**Guideline #4:** Management strategies for livestock grazing will ensure that long-term resource capabilities can be sustained. End of season stubble heights, streambank moisture content, and utilization of herbaceous and woody vegetation are critical factors which must be evaluated in any grazing strategy. These considerations are essential to achieving long-term vegetation or stream channel objectives and should be identified on a site-species basis and used as terms and conditions.

**Guideline #5:** Grazing will be managed to promote desired plants and plant communities of various age classes, based on the range and physiological conditions of plant growth. Management approaches will be identified on a site-specific basis and implemented through terms and conditions. Caution should be used to avoid early spring grazing use when soils and streambanks are wet and susceptible to compaction and physical damage that occurs with animal trampling. Likewise, late summer and fall treatments in woody shrub communities should be monitored closely to avoid excessive utilization.

**Guideline #6:** The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.

**Guideline #7:** Locate facilities (e.g. corrals, water developments) away from riparian-wetland areas.

**Guideline #8:** When provided, supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas so not to adversely impact streambank stability, riparian vegetation, water quality, or other sensitive areas (i.e., key wildlife wintering areas). Salt and minerals should be placed in upland sites to draw livestock away from watering areas or other sensitive areas and to contribute to more uniform grazing distribution.

**Guideline #9:** Noxious weed control is essential and should include: cooperative agreements, public education, and integrated pest management (mechanical, biological, chemical).

**Guideline #10:** Livestock management should utilize practices such as those referenced by the NRCS published prescribed grazing technical guide to maintain, restore or enhance water quality.

**Guideline #11:** Grazing management should maintain or improve habitat for federally listed threatened, endangered, and sensitive plant and animals.

**Guideline #12:** Grazing management should maintain or promote the physical and biological conditions to sustain native populations and communities.

**Guideline #13:** Grazing management should give priority to native species. Non-native plant species should only be used in those situations where native seed is not readily available in sufficient quantities, where native plant species cannot maintain or achieve the standards, or where not-native plant species provide an alternative for the management and protection of native rangelands.

**Guideline #14:** Allotment monitoring determines how on-going management practices are affecting the rangeland. To do so, the evaluations should be based on: measureable management objectives; permanent and/or repeatable monitoring locations; and short-term and long-term data.

# Appendix D

## Montana Noxious Weed List

Effective March 27, 2008

### Category 1

Category 1 noxious weeds are weeds that are currently established and generally widespread in many counties of the state. Management criteria include awareness and education, containment and suppression of existing infestations and prevention of new infestations. These weeds are capable of rapid spread and render land unfit or greatly limit beneficial uses.

- (a) Canada thistle (*Cirsium arvense*)
- (b) Field bindweed (*Convolvulus arvensis*)
- (c) Whitetop or Hoary cress (*Cardaria draba*)
- (d) Leafy spurge (*Euphorbia esula*)
- (e) Russian knapweed (*Centaurea repens*)
- (f) Spotted knapweed (*Centaurea maculosa*)
- (g) Diffuse knapweed (*Centaurea diffusa*)
- (h) Dalmatian toadflax (*Linaria dalmatica*)
- (i) St. Johnswort (*Hypericum perforatum*)
- (j) Sulfur (Erect) cinquefoil (*Potentilla recta*)
- (k) Common tansy (*Tanacetum vulgare*)
- (l) Oxeye-daisy (*Chrysanthemum leucanthemum* L.)
- (m) Houndstongue (*Cynoglossum officinale* L.)
- (n) Yellow toadflax (*Linaria vulgaris*)
- (o) Hoary alyssum (*Berteroa incana*)

### Category 2

Category 2 noxious weeds have recently been introduced into the state or are rapidly spreading from their current infestation sites. These weeds are capable of rapid spread and invasion of lands, rendering lands unfit for beneficial uses. Management criteria include awareness and education, monitoring and containment of known infestations and eradication where possible.

- (a) Purple loosestrife or lythrum (*Lythrum salicaria*, *L. virgatum*, and any hybrid crosses thereof).
- (b) Tansy ragwort (*Senecio jacobea* L.)
- (c) Meadow hawkweed complex (*Hieracium pratense*, *H. floribundum*, *H. piloselloides*)
- (d) Orange hawkweed (*Hieracium aurantiacum* L.)
- (e) Tall buttercup (*Ranunculus acris* L.)
- (f) Tamarisk [Saltcedar] (*Tamarix* spp.)
- (g) Perennial pepperweed (*Lepidium latifolium*)
- (h) Rush skeletonweed (*Chondrilla juncea*)
- (i) Yellowflag iris (*Iris pseudacorus*)
- (j) Blueweed (*Echium vulgare*)

### Category 3

Category 3 noxious weeds have not been detected in the state or may be found only in small, scattered, localized infestations. Management criteria include awareness and education, early detection and immediate action to eradicate infestations. These weeds are known pests in nearby states and are capable of rapid spread and render land unfit for beneficial uses.

- (a) Yellow starthistle (*Centaurea solstitialis*)
- (b) Common crupina (*Crupina vulgaris*)
- (c) Eurasian watermilfoil (*Myriophyllum spicatum*)
- (d) Dyer's woad (*Isatis tinctoria*)
- (e) Flowering rush (*Butomus umbellatus*)
- (f) Japanese knotweed complex (*Polygonum cuspidatum*, *sachalinense* & *polystachyum*)

#### ***Category 4***

Category 4 noxious weeds are invasive plants and may cause significant economic or environmental impacts if allowed to become established in Montana. Management criteria include prohibition from sale by the nursery trade. Research and monitoring may result in the plant being listed in a different category.

- (a) Scotch broom (*Cytisus scoparius*)

## **Appendix E**

### **Monitoring and Evaluation**

Grazing allotments not meeting the standards for rangeland health due to livestock grazing management will receive the highest priority for monitoring and evaluation. Various monitoring techniques will be used depending on resource objectives. Existing upland and riparian transect sites would continue to be used and additional sites may be established. Additional study locations may be needed to ensure that adequate amounts of data can be collected to ensure that allotments are continuing to meet or making significant progress towards meeting the standards for rangeland health. Additional riparian study sites would need to be established. There should be a minimum of one upland and one riparian site or transect per allotment or pasture depending on the size of the allotments and pastures. Riparian study sites will not be established on allotments that have no or negligible amounts of riparian habitat. All new monitoring sites and transects will be located in areas where the data that will be collected is relevant to management goals and objectives, and should respond to management changes over time.

Upland monitoring would be conducted utilizing key native grass species dominant at each study site. In most cases, the key species will be western wheatgrass, green needlegrass and bluebunch wheat grass.

Riparian monitoring will consist of continued use of the Proper Functioning Condition protocol established in Technical References TR-1737-15 “Riparian Area Management – A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas”( Appendix L). Greenline transects may also be established for some allotments. This monitoring protocol is outlined in “Monitoring the vegetation resources in riparian areas” (Appendix L).

Grazing permittees will be responsible to constantly monitor livestock distribution and utilization levels to ensure that livestock grazing is consistent with the established guidelines for livestock grazing management (Appendix C). Monitoring would be conducted according to site-specific goals and objectives for each allotment. Permittees will be encouraged to enter into cooperative monitoring agreements with the BLM as outlined in Washington Office Instructional Memorandum WO-2004-179 (Appendix K).

Monitoring data will be collected by the BLM and or in cooperation with the permittee(s) in accordance with standard protocols as outlined in Technical Reference 1730-1 “Measuring & Monitoring Plan Populations” (Appendix L). BLM personnel will be available to provide monitoring training and assistance to permittees that sign up for the cooperative monitoring program.

Upland health assessment sites marked by UTM coordinates listed in Appendix G may continue to be used for allotment evaluation proposes and may have permanent monitoring transects established if the location meets the criteria listed above.

Allotments not meeting the standards for rangeland health due to livestock grazing management will have the first priority for monitoring and evaluation. Allotments not meeting the standards for reasons other than livestock grazing will have the second priority for monitoring and evaluation and the allotments meeting or making significant progress towards meeting the standards will be monitored and or evaluated as needed to ensure that the standards continue to be met or the allotment is still making significant progress towards meeting the standards.

Appendices G and J list the upland and riparian monitoring schedules by allotment. The monitoring schedules were established based on compliance with the standards for rangeland health and the need to assess impacts of proposed and potential future management changes. Periodic allotment visits will also be conducted within the planning area as needed to assess general resource conditions and ensure compliance with the permitted grazing use. Review of monitoring data would occur yearly. An allotment assessment taking into account applicable impacts from all resource uses would need to be completed within 10 years for grazing permit renewal purposes.

First order fire effects would be monitored following any prescribed burns.



## Appendix F

### Proposed Range Improvement Projects

Allotment Name	Allotment No.	Identification No.	Proposed Range Improvement Project	Project Area
Chimney Crossing	12501	02	Permanent 4 wire allotment boundary fence	2.5 miles
East Indian Butte Common	02001	03	1.5 inch 120 PSI stock water pipeline with stock tanks	12 miles
North Crooked Creek	02506	16	1.5 inch 120 PSI stock water pipeline with stock tanks	6 miles
North Crooked Creek	02506	16	Removal of permanent allotment cross fence	1.5 miles
North Crooked Creek	02506	16	Permanent 3 wire allotment cross fence	2 miles
Maruska	02646	17	Removal of tires and other debris from 2 reservoirs	3 acres
Hay Coulee	02505	19	Removal of permanent allotment cross fence	1.2 miles
Hay Coulee	02505	19	Permanent 4 wire allotment boundary fence	3 miles
Hay Coulee	02505	19	Permanent 3 wire allotment cross fence	3.2 miles
Hay Coulee	02505	19	1.5 inch 120 PSI stock water pipeline with stock tanks	1 mile
Nine Mile Common	02678	34	2 wire high tensile electric fence	0.5 miles





## Appendix G

### Upland Health Assessments by Allotment

Allotment Name	Allot. No. & Transect No.	Identification Number (In order to adhere to the Privacy Act, the names of permittees will not be used in this table. Each permittee was informed, by letter, of which number refers to his/her allotment(s)).	Ecol. Site Index Score/seral stage	Trend	Range Health Indicators (departure from expected for the site)	Transect UTM Coordinates	Monitoring Schedule*
WEST CROOKED CREEK	15128 T1	01	58 - late	3 - up	slight/moderate	12 T 0683676 5253715	5 years
CHIMNEY CROSSING	12501 T1	02	58 - late	4 - up	slight/moderate	12 T 0696010 5255841	5 years
	12501 T2	02	72 - late	3 - up	none/slight	12 T 0700187 5256047	5 years
	12501 T4	02	63 - late	3 - up	slight/moderate	12 T 0677395 5243651	5 years
EAST INDIAN BUTTE COMMON	02001 T1 MCN	03	51 - late	2 - up	moderate	12 T 0690405 5268764	3 years
	02001 T1 MCS	03	60 - late	1 - static	slight/moderate	12 T 0696168 5265935	3 years
	02001 T1 WS	03	62 - late	6 - up	none/slight	12 T 0672597 5265157	3 years
	02001 T2 ES	03	55 - late	5 - up	slight/moderate	12 T 0681923 5268429	3 years
	02001 T1 GP	03	55 - late	2 - up	slight/moderate	12 T 0679073 5268301	3 years
	02001 T1 CS	03	52 - late	1 - static	slight/moderate	12 T 0669557 5267968	3 years
	02001 T1 RP	03	56 - late	3 - up	slight/moderate	12 T 0671198 5263774	3 years
	02001 T1 WS	03	80 - PNC	4 - up	none/slight	12 T 0669587 5267030	3 years
	02001 T1 LP	03	50 - late	2 - up	slight/moderate	12 T 0679042 5262128	3 years
INDIAN BUTTE	02008 T1	04	41 - mid	4 - down	moderate	12 T 0684899 5364143	5 years
MAULAND/HANSON	02027 T1	05	75 - PNC	2 - up	slight/moderate	12 T 0700030 5267211	10 years
HEIL	02633 T1	06	30 - mid	2 - down	moderate/extreme	12 T 0669853 5249461	5 years
KELLNER RESERVOIR	12702 T1	07	30 - mid	2 - down	moderate	12 T 0670617 5250670	10 years
KOSIR	02641 T1	08	15 - early	2 - up	moderate	12 T 0674620 5245578	10 years
BUTTON BUTTE	02599 T1	09	50 - mid	1 - static	slight/moderate	12 T 0690592 5261639	5 years
LUKENS FLAT	02014 T1	10	50 - mid	7 - up	none/slight	12 T 0667528 5259817	10 years
KOMAREK	02041 T1	11	35 - mid	6 - down	moderate	12 T 0662156 5251301	3 years
WOLFF IND. B	02513 T1	12	19 - early	3 - up	moderate	12 T 0680057 5245098	10 years
	02513 T2	12	45 - mid	3 - up	slight/moderate	12 T 0680569 5245056	10 years
	02513 T3	12	38 - mid	2 - up	slight/moderate	12 T 0677160 5244460	10 years
	02513 T4	12	40 - mid	4 - down	slight/moderate	12 T 0684325 5243260	10 years
EAST ANTELOPE	15101 T1	13	43 - mid	3 - up	moderate	12 T 0693774 5257352	3 years
	15101 T2	13	55 - late	3 - up	slight/moderate	12 T 0691734 5255898	3 years
	15101 T3	13	60 - late	3 - up	slight/moderate	12 T 0687635 5256733	3 years
	15101 T4	13	43 - mid	2 - up	slight/moderate	12 T 0683280 5249671	3 years
JORDAN HOME RANCH	02012 T1	14	48 - mid	2 - up	slight/moderate	12 T 0669830 5257942	10 years
JORDAN EAST PASTURE	15105 T1	15	52 - late	6 - up	none/slight	12 T 0682722 5259395	10 years
NORTH CROOKED CREEK	02506 T1	16	60 - late	4 - down	slight/moderate	12 T 0688468 5257528	3 years
	02506 T2	16	70 - late	8 - up	slight/moderate	12 T 0701019 5260117	3 years
	02506 T3	16	50 - mid	1 - static	slight/moderate	12 T 0695278 5258877	3 years
	02506 T5	16	50 - mid	3 - up	slight/moderate	12 T 0686698 5263112	3 years

\* The monitoring schedule was established based on current resource conditions and the need to assess impacts of proposed changes. The schedule does not include random visits or monitoring of restoration projects.

Allotment Name	Allot. No. & Transect No.	Identification Number (In order to adhere to the Privacy Act, the names of permittees will not be used in this table. Each permittee was informed, by letter, of which number refers to his/her allotment(s)).	Ecol. Site Index Score/seral stage	Trend	Range Health Indicators (departure from expected for the site)	Transect UTM Coordinates	Monitoring Schedule*
MARUSKA	02646 T1	17	60 - late	3 - down	slight/moderate	12 T 0664469 5250486	10 years
	02646 T2	17	57 - late	5 - up	slight/moderate	12 T 0665947 5249082	10 years
MATHISON PLACE	02017 T1	18	50 - mid	2 - up	slight/moderate	12 T 0687814 5263979	3 years
HAY COULEE	02505 T1	19	45 - mid	1 - static	slight/moderate	12 T 0695642 5255459	3 years
	02505 T2	19					3 years
	02505 T3	19					3 years
PITMAN RANCH	02514 T1	20	48 - mid	3 - down	moderate	12 T 0695249 5245639	3 years
	02514 T2	20	43 - mid	1 - static	slight/moderate	12 T 0698316 5243671	3 years
BIG JOE	02669 T1	21	42 - mid	0 - static	slight/moderate	12 T 0663555 5250436	3 years
MONEY ACRES	02019 T1	22	53 - late	3 - up	moderate	12 T 0658218 5253989	10 years
SLUGGETT RANCH	02512 T1	23	37 - mid	6 - down	slight/moderate	12 T 0689754 5247489	3 years
	02512 T2	23	6 - early	2 - down	moderate	12 T 0692609 5244769	3 years
	02512 T3	23	59 - late	6 - up	slight/moderate	12 T 0693606 5247828	3 years
ANTELOPE	02508 T1	24	55 - late	3 - up	slight/moderate	12 T 0689233 5254318	10 years
	02508 T2	24	60 - late	2 - up	slight/moderate	12 T 0684920 5250753	10 years
STYER ANTELOPE	02510 T1	25	60 - late	5 - up	slight/moderate	12 T 0688929 5253947	10 years
GALLOWAY	02516 T1	26	35 - mid	4 - down	moderate	12 T 0688931 5250950	3 years
WEST CR. CREEK	02504 T1	27	43 - mid	2 - up	moderate	12 T 0685366 5256957	10 years
	02504 T2	27	57 - late	4 - up	slight/moderate	12 T 0683437 5254926	10 years
	02504 T3	27	56 - late	3 - up	slight/moderate	12 T 0683436 5253240	10 years
STYER IND. B (KOSIR)	02509 T1	28	52 - late	1 - static	slight/moderate	12 T 0689974 5254538	10 years
BIG CROOKED	02503 T1	29	58 - late	0 - static	slight/moderate	12 T 0701423 5254613	10 years
	02503 T2	29	49 - mid	0 - static	slight/moderate	12 T 0698309 5253925	10 years
WEAVER RANCH	02511 T1	30	40 - mid	5 - down	moderate	12 T 0700153 5250309	5 years
HANSON DAM	14904 T1	31	45 - mid	0 - static	slight/moderate	12 T 0700810 5240847	10 years
WILLMORE	02034 T1	32	43 - mid	5 - up	slight/moderate	12 T 0670454 5259978	10 years
NINE MILE COMMON	15037 T1	33	7 - early	2 - down	moderate/extreme	12 T 0672959 5258592	10 years
NINE MILE COMMON	02678 T1	34	45 - mid	0 - static	moderate	12 T 0670616 5254639	5 years

## Appendix H

### Rangeland Health Determinations by Allotment

Allotment Name	Allotment No.	ID No.	Standard 1 (uplands)	Standard 2 (riparian)	Standard 3 (H2O qual.)	Standard 5 (biodiv.)	Cause (by standard)
WEST CROOKED CREEK	15128	01	meeting	not meeting	meeting	meeting	2 progress being made
CHIMNEY CROSSING	12501	02	meeting	meeting	meeting	meeting	
EAST INDIAN BUTTE COMMON	2001	03	not meeting	not meeting	meeting	not meeting	1,2,4,5,8,10,13 livestock
INDIAN BUTTE	2008	04	not meeting	n/a	n/a	not meeting	1,4,5,10,11,12 livestock
MAULAND/HANSON	2027	05	meeting	n/a	n/a	meeting	
HEIL	2633	06	not meeting	n/a	n/a	not meeting	1,2,4,5,10,12 livestock
KELLNER RESERVOIR	12702	07	not meeting	n/a	n/a	not meeting	13 crested wheatgrass
KOSIR	2641	08	not meeting	n/a	n/a	not meeting	12,13 crested wheatgrass
BUTTON BUTTE	2599	09	not meeting	n/a	n/a	not meeting	1,4,5,11 livestock, weeds
LUKENS FLAT	2014	10	meeting	n/a	n/a	meeting	
KOMAREK	2041	11	not meeting	n/a	n/a	not meeting	1,4,5,9,10,11,12,13 livestock
WOLFF IND. B	2513	12	not meeting	n/a	n/a	not meeting	12,13 crested wheatgrass
EAST ANTELOPE	15101	13	meeting	not meeting	meeting	not meeting	2,5,10 livestock
JORDAN HOME RANCH	2012	14	meeting	n/a	n/a	meeting	
JORDAN EAST PASTURE	15105	15	meeting	not meeting	meeting	meeting	2 progress being made
NORTH CROOKED CREEK	2506	16	not meeting	not meeting	meeting	not meeting	2,4,5,10,12 livestock, weeds
MARUSKA	2646	17	meeting	n/a	n/a	not meeting	13 crested wheatgrass
MATHISON PLACE	2017	18	not meeting	not meeting	meeting	meeting	1,2,4,5,8,10 livestock
HAY COULEE	2505	19	not meeting	n/a	n/a	not meeting	1,4,5,8,11 livestock
PITMAN RANCH	2514	20	not meeting	n/a	n/a	not meeting	8 livestock
BIG JOE	2669	21	not meeting	n/a	n/a	not meeting	1,4,5,11 livestock
MONEY ACRES	2019	22	meeting	n/a	n/a	meeting	
SLUGGETT RANCH	2512	23	not meeting	n/a	n/a	not meeting	4,5,12,13 livestock, crested wheatgrass
ANTELOPE	2508	24	meeting	n/a	n/a	meeting	
STYER ANTELOPE	2510	25	meeting	n/a	n/a	meeting	
GALLOWAY	2516	26	not meeting	n/a	n/a	not meeting	1,4,5,11,12 livestock
WEST CR CREEK	2504	27	meeting	n/a	n/a	meeting	
STYER IND. B (KOSIR)	2509	28	meeting	n/a	n/a	meeting	
BIG CROOKED	2503	29	meeting	n/a	n/a	meeting	
WEAVER RANCH	2511	30	not meeting	n/a	n/a	meeting	4 crested wheatgrass
HANSON DAM	14904	31	not meeting	n/a	n/a	not meeting	12,13 crested wheatgrass
WILLMORE	2034	32	meeting	n/a	n/a	meeting	
NINE MILE COMMON	15037	33	not meeting	n/a	n/a	not meeting	1,12,13 crested wheatgrass
NINE MILE COMMON	2678	34	not meeting	n/a	n/a	not meeting	1,2,4,5,10,11,12,13 livestock



## Appendix I

### Current Allotment Information

Allotment Name	Allotment No.	Identification No.	Public Acres	AUM's	% Public Land	Livestock Number	Season of Use
WEST CROOKED CREEK	15128	01	440	103	51	134 cattle	09/16-10/31
CHIMNEY CROSSING	12501	02	2735	665	various	1, 225 cattle	03/01-02/28, 05/01-10/30
EAST INDIAN BUTTE COMMON	02001	03	46010	various	various	various cattle	various
INDIAN BUTTE	02008	04	78	15	100	1 cattle	03/01-02/28
MAULAND/HANSON	02027	05	1178	180	various	16,26 cattle	06/01-11/01
HEIL	02633	06	800	201	100	1, 28 cattle	03/01-05/31, 11/01-02/28, 03/01-02/28
KELLNER RESERVOIR	12702	07	80	11	100	1 cattle	11/01-02/28, 03/01-04/30
KOSIR	02641	08	160	49	100	5 cattle	03/01-02/28
BUTTON BUTTE	02599	09	1670	330	33	245 cattle	05/15-09/15
LUKENS FLAT	02014	10	600	136	100	11 cattle	03/01-02/28
KOMAREK	02041	11	360	55	100	5 cattle	03/01-02/28
WOLFF IND. B	02513	12	840	261	100	22 cattle	03/01-02/28
EAST ANTELOPE	15101	13	3411	799	34	388 cattle	05/01-10/31
JORDAN HOME RANCH	02012	14	1279	147	100	12 cattle	03/01-02/28
JORDAN EAST PASTURE	15105	15	720	72	100	6 cattle	03/01-02/28
NORTH CROOKED CREEK	02506	16	7195	1699	various	various	various
MARUSKA	02646	17	960	194	various	6, 40, 80 cattle	03/01-02/28, 06/01-08/15, 10/01-10/15
MATHISON PLACE	02017	18	335	60	100	5 cattle	03/01-02/28
HAY COULEE	02505	19	3654	817	various	28, 280 cattle	05/16-10/15, 06/01-10/15
PITMAN RANCH	02514	20	918	238	100	20 cattle	03/01-02/28
BIG JOE	02669	21	160	36	100	7 cattle	06/01-10/31
MONEY ACRES	02019	22	360	71	100	9 cattle	04/01-11/30
SLUGGETT RANCH	02512	23	714	175	100	15 cattle	03/01-02/28
ANTELOPE	02508	24	1238	302	28	193 cattle	05/15-10/31
STYER ANTELOPE	02510	25	480	119	29	73 cattle	05/15-10/31
GALLOWAY	02516	26	160	46	100	4 cattle	03/01-02/28
WEST CR. CREEK	02504	27	1719	399	various	85, 102 cattle	05/16-10/31
STYER IND. B (KOSIR)	02509	28	40	9	100	1 cattle	03/01-05/31, 08/01-02/28
BIG CROOKED	02503	29	2883	434	45	160 cattle	05/01-10/31
WEAVER RANCH	02511	30	575	159	100	14 cattle	03/01-02/28
HANSON DAM	14904	31	80	17	100	1 cattle	03/01-02/28
WILLMORE	02034	32	1062	202	100	3 cattle	03/01-02/28
NINE MILE COMMON	15037	33	640	264	various	61,65 cattle	05/15-11/15, 05/16-11/15
NINE MILE COMMON	02678	34	40	8	100	1 cattle	03/01-02/28



## Appendix J

### Riparian Health Assessments by Allotment

Allotment Name	Allotment No.	Identification No.	Stream Name / Polygon No.	Health Rating	Distance (miles)	Standard Met?	Reason Not Meeting	Monitoring Schedule
WEST CROOKED CREEK	15128	01	Antelope Creek - 1	73 - FAR (upward)	1.5	No	making progress towards meeting standards	10 years
CHIMNEY CROSSING	12501	02	Crooked Creek - 1	82 - PFC	1.3	Yes		10 years
EAST INDIAN BUTTE COMMON	02001	03	Carroll Coulee - 1	60 - FAR (upward)	2	No	making progress towards meeting standards	5 years
EAST INDIAN BUTTE COMMON	02001	03	Carter Coulee - 2	56 - NF	1	No	livestock / weeds	5 years
EAST INDIAN BUTTE COMMON	02001	03	Carter Coulee - 3	70 - FAR	2	No	livestock / weeds	5 years
EAST INDIAN BUTTE COMMON	02001	03	Sand Creek - 1	84 - PFC	0.5	Yes		10 years
EAST INDIAN BUTTE COMMON	02001	03	Sand Creek - 3A/3B	66 - FAR (upward)	1	No	making progress towards meeting standards	10 years
EAST INDIAN BUTTE COMMON	02001	03	Sand Creek - 4	80 - PFC	2	Yes		10 years
EAST ANTELOPE	15101	13	Antelope Creek - 2	32 - NF	0.5	No	livestock	5 years
EAST ANTELOPE	15101	13	Crooked Creek - 1	79 - FAR (upward)	1	No	making progress towards meeting standards	5 years
EAST ANTELOPE	15101	13	Crooked Creek - 2	89 - PFC	0.6	Yes		5 years
EAST ANTELOPE	15101	13	Crooked Creek - 3	98 - PFC	0.25	Yes		5 years
JORDAN EAST PASTURE	15105	15	Crooked Creek - 11	77 - FAR (upward)	0.9	No	making progress towards meeting standards	10 years
NORTH CROOKED CREEK	02506	16	Antelope Creek - 3	75 - FAR	0.3	No	livestock / weeds	5 years
NORTH CROOKED CREEK	02506	16	Crooked Creek - 4/5	67 - FAR	0.5	No	livestock	5 years
NORTH CROOKED CREEK	02506	16	Crooked Creek - 6	61 - FAR	0.5	No	livestock	5 years
NORTH CROOKED CREEK	02506	16	Crooked Creek - 7	77 - FAR (upward)	1.75	No	livestock	5 years
NORTH CROOKED CREEK	02506	16	Crooked Creek - 9	45 - NF	1	No	livestock	5 years
NORTH CROOKED CREEK	02506	16	Crooked Creek - 10	49 - NF	0.4	No	livestock	5 years
MATHISON PLACE	02017	18	Carroll Coulee - 2	42 - NF	0.25	No	livestock	5 years





**Appendix K**  
**Washington Office Instructional**  
**Memorandum WO-2004-179**  
**(with attachment)**

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
WASHINGTON, D.C. 20240

April 14, 2004

In Reply Refer To:  
4100 (220) P

EMS TRANSMISSION 05/18/2004  
Instruction Memorandum No. 2004-179  
Expires: 09/30/2005

To: AFOs

From: Assistant Director, Renewable Resources and Planning

Subject: Cooperative Rangeland Monitoring Letter/Memorandum of Understanding (MOU) and Request for Permittee/Lessee List of Participants

DD: 06/18/2004; DD: 08/20/2004

**Program Area:** Rangeland Management

**Purpose:** The purpose of this instruction memorandum is to request field offices to send the attached letter and MOU to all grazing permittees and lessees, and request each State office to identify a list of permittees/lessees willing to participate in the cooperative monitoring addressed in this MOU.

**Policy/Action:** The Public Lands Council (PLC) President and the BLM Director signed an MOU on January 30, 2004, to implement cooperative rangeland monitoring between grazing permittees/lessees and BLM. The MOU's concept is to provide the opportunity for cooperation, communication, and consultation between permittees/lessees and the BLM. This important and timely collaboration will provide a better set of information for making range decisions.

Field offices should send the attached letter and MOU to their permittees and lessees by June 18, 2004. State and field office range staffs should become familiar with the MOU and be able to respond to questions or requests to conduct cooperative monitoring. The letter also requests each State office, together with PLC, to identify a list of permittees/lessees willing to participate in this joint cooperative monitoring effort.

**Timeframe:** Field Offices will send out the attached letter and MOU to their permittees and lessees by June 18, 2004. By August 20, 2004, each State office will submit to WO 220 a list of permittees/lessees that have expressed a willingness to participate in this joint cooperative monitoring effort for the 2004 field season.

**Budget Impact:** Costs may increase in the short-term to complete monitoring plans if not already prepared. Costs should be reduced in the long-term by decreasing litigation on data collection and decisionmaking.

**Manual/Handbook Sections Affected:** No Manual or Handbook sections are affected.

**Coordination:** NST, State Range Leads, and Executive Director PLC.

**Contact:** Bob Bolton, Senior Rangeland Management Specialist, WO 220 at 202-452-7792; or Dick Mayberry, Rangeland Management Specialist, WO 220 at 202-452-7750.

Signed by:  
Thomas H. Dyer  
Acting Assistant Director  
Renewable Resources and Planning

Authenticated by:  
Barbara J. Brown  
Policy & Records Group, WO-560

1 Attachment

1 – Permittee/Lesseeletter and MOU (7 pp)



## United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Washington, D.C. 20240

<http://www.blm.gov>

Dear BLM Grazing Permittee/Lessee:

Enclosed is a Memorandum of Understanding (MOU) concerning cooperative rangeland monitoring recently entered into by the Bureau of Land Management (BLM) and the Public Lands Council (PLC). This MOU sets out a framework to improve the quality and quantity of short- and long-term allotment level monitoring information on BLM administered rangelands. The opportunity for cooperation, communication, and consultation between permittees/lessees and the BLM will be collaborative work done on a voluntary basis. Better information for making range decisions will also develop because of this MOU.

The monitoring information obtained as a result of cooperative monitoring will help stabilize livestock grazing on public lands and achieve desired future range conditions. The BLM and PLC will benefit by increasing the number of allotments being monitored. Each entity will enjoy shared benefits from the establishment of uniform monitoring protocols, data collection processes, and reporting methods.

One important goal of this MOU is to make significant progress in the implementation of this cooperative rangeland monitoring effort. Every rangeland management specialist and field office manager with a range program should get a copy of this MOU and work to identify permittees/lessees to implement it. Similarly, each PLC or National Cattlemen Beef Association State representative will also receive a copy of the MOU will work to identify permittees/lessees who want to participate in the activity. Each State office, together with the PLC, will work to identify and expand a list of permittees/lessees willing to participate in this joint cooperative monitoring effort.

The data collected through the framework of the MOU efforts will be used to make management decisions on the affected allotments. A systematic approach to monitoring using BLM approved protocols, such as those described on page 3 of the MOU, will assist in MOU implementation and benefit the BLM and the permittee/lessees of BLM administered rangelands.

We are encouraged about this cooperative relationship between the BLM, the PLC, and grazing permittees/lessees that choose to participate in this cooperative rangeland monitoring effort. The BLM will distribute this letter and enclosed MOU to rangeland management specialists, field office managers and other staff as appropriate in your State. If you have any questions regarding implementation of the MOU please contact your local BLM field office range personnel, or your State PLC contact.

Sincerely,

K. L. Bliss  
President, Public Lands Council

Kathleen Clarke  
Director, Bureau of Land Management

MAY 13 2004

Enclosure

BLM MOU WO220-2004-01 1  
**MEMORANDUM OF UNDERSTANDING**  
**Between: U. S. Department of the Interior - Bureau of Land Management**  
**and the Public Lands Council**

This agreement is entered into between the Public Lands Council (PLC) and the Department of the Interior (DOI), Bureau of Land Management (BLM).

**STATEMENT OF PURPOSE**

The signatories to this Memorandum of Understanding (MOU) believe that cooperative rangeland monitoring is an important tool to help stabilize livestock grazing on lands administered by the BLM and to achieve desired range conditions in the future. Such a monitoring program involving the exchange of information benefits the collection, analysis and interpretation of monitoring information through the cooperation of public and private interests. The signatories also believe that interpretation of data and conclusions about resource condition at the allotment level should be principally based on facts and data collected on the ground, using the latest scientific techniques. At times, there is a need to utilize the professional judgments of rangeland resource professionals. To evaluate and interpret all of the information available to accomplish allotment/lease objectives, the current and historic knowledge and practical experience of the permittees/lessees is also necessary.

This MOU is intended to provide a framework for the facts and data to be collected, analyzed, shared with the public, and used by the BLM to make land management decisions.

**AUTHORITY**

Section 307(b) of the Federal Land Policy and Management Act of 1976, 43 U.S.C 1737(b), authorizes the Secretary, subject to the provisions of applicable law, to enter into contracts and cooperative agreements involving the management, protection, development, and sale of public lands.

**RESPONSIBILITIES AND PROCEDURES**

The PLC and the BLM will jointly:

1. Develop a letter, to be signed by national level representatives of both parties to inform public land permittees/lessees and BLM employees of the purpose of this MOU.
2. Encourage respective local members and employees to participate in joint, cooperative monitoring.

**The Public Lands Council will, as appropriate:**

1. Publicize and otherwise support joint, cooperative monitoring among its members, including emphasis of implementation of monitoring on a watershed basis where practical.
2. Encourage livestock permittees and lessees to work cooperatively with the BLM to develop a monitoring plan which, at a minimum, addresses those items outlined in Appendix A (attached) or public land.
3. Encourage grazing permittees and lessees to include private or leased land to the extent such inclusion is consistent with the scope of Federal jurisdiction, and only with written permission from the owner/lessee.
4. Provide a written report by February 28 of each year to the BLM's Rangeland, Soil, Water, and Air (WO 220) Group Manager on the status of activities pertinent to this MOU over the preceding year.
5. Work cooperatively with BLM to implement and stress the importance of consistent use of monitoring protocols or methodologies by Federal land management agencies.

**The Bureau of Land Management will:**

1. Continue working with livestock permittees and lessees who have actively participated with BLM in collecting and/or analyzing monitoring data within the past 5 years. Confirm they still have interest in conducting joint, cooperative monitoring.

2. Work with additional livestock permittees and lessees to jointly monitor to the maximum extent feasible within limits of available funds and BLM priorities.
3. Provide an annual status report to PLC at its Spring Conference on BLM's activities in the rangeland monitoring program during the preceding year. The annual report may address such matters as the number of permittee/lessee participants in the preceding year, a summary of the resources used in the previous fiscal year, and the number of participants projected for the upcoming year.
4. Work cooperatively with the livestock permittees and lessees to develop a monitoring plan. At a minimum it should address those items outlined in the attached Appendix A for the public land portion of their operation. Parties will comply with the Federal Advisory Committee Act to the extent it applies.
5. Involve permittees and lessees in data collection and evaluation processes, and provide copies of evaluation(s) to these permittees and lessees.
6. Coordinate with the Natural Resources Conservation Service to perform soil surveys and develop Ecological Site Descriptions where joint, cooperative monitoring occurs.
7. Maintain the final decision authority concerning the planning, collection and interpretation of the monitoring data collected under this MOU. The BLM retains its responsibility to make decisions relating to public land management, including livestock grazing, and compliance with public involvement requirements in the grazing regulations.

#### **ADMINISTRATIVE PROVISIONS**

- A. Public - Private Partnership: The planning, collection and interpretation of monitoring data will be jointly conducted between the permittee or lessee and BLM pursuant to the agency's applicable protocols. Permittees or lessees may seek assistance from other individuals or institutions (i.e., the extension service and/or consultants) when taking part in this joint venture. The BLM shall accept for consideration monitoring data collected using BLM- approved techniques when the data meets BLM standards as determined by the authorized officer. The BLM may check data and conduct random quality control reviews of data presented by the permittee/lessee or their representative prior to using the data. Monitoring data not collected as referenced above or found not to accurately reflect on-the-ground conditions may not be used.

When, at the request of the permittee/lessee, assistance is provided by consultants, institutions, other agencies or individuals, the permittee(s) or lessee(s) shall designate one individual to work with the BLM.

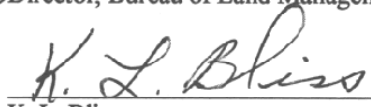
- B. Prior to implementing joint cooperative monitoring both parties shall agree to the methods for collecting data as specified in BLM-approved protocols. This includes but not limited to Technical Reference 1730-1, Measuring and Monitoring Plant Populations, 1734-3, Utilization Studies and Residual Measurements, 1734-4, Sampling Vegetation Attributes, 1734-7, and Ecological Site Inventory.
- C. Nothing in this agreement may be construed to obligate either the DOI or the United States to any current or future expenditure of resources in advance of the availability of appropriations from Congress. This agreement does not obligate the DOI or the United States to expend funds, property or services.
- D. While recognizing that the BLM has a responsibility to coordinate, consult, and communicate with many different entities concerning management of the public lands, this MOU addresses interaction between the BLM and PLC who represents members of the livestock industry operating on public lands. This MOU in no way precludes or restricts the involvement of other public land users, interested public, or other public or private agencies, organizations or individuals from participating in this joint, cooperative monitoring.
- E. Nothing in this agreement shall be construed to conflict with any existing statutes, regulation or policy of the United States or any policy or procedures of the BLM or the DOI.
- F. This agreement shall be effective on the date of the last signature for a period of five years, at and that time it may be reaffirmed.

- G. This agreement may be re-negotiated, amended, extended, or modified by a written amendment through an exchange of correspondence between authorized officials of PLC and BLM.
- H. Either party may terminate this agreement by written notice to the other party.
- I. Each party will obtain prior approval from the other of all press releases, published advertisements, or other statements intended for the public that refer to this agreement or to the parties, the Department, the name or title of any employee of the Department, or other cooperating individuals in connection with this MOU.
- J. Nothing in this MOU may be interpreted to imply that the United States, the DOI, or the BLM endorses any product, service, or policy of PLC. The PLC will not take any action or make any statement that suggests or implies such an endorsement.

APPROVED:

  
\_\_\_\_\_  
Kathleen Clarke  
Director, Bureau of Land Management

1-30-04  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
K. L. Bliss  
President, Public Lands Council

1-30-04  
\_\_\_\_\_  
Date

## ***Appendix A***

### **Allotment Monitoring Plan**

The following items should be considered when developing a monitoring plan with the grazing permittee or lessee. It is not intended for this list to be all-inclusive or absolute. Local considerations need to be factored in when jointly preparing the monitoring plan. The monitoring plan should be considered a dynamic document, which is reviewed and modified as necessary when new information becomes available. If an Allotment Management Plan (AMP) exists, it is suggested that the monitoring plan become part of the AMP after compliance with all applicable statutory and regulatory requirements.

#### **A. Management Objectives**

State clearly the land use plan and/or other management plan watershed or landscape management objectives and desired plant community objectives that will serve as the basis for selecting the attributes to be monitored and the interpretations to be made of monitoring data. Allotments may be used or aggregated if size approximates a watershed level. Objectives may be identified by reviewing and consulting relevant BLM documents.

#### **B. Existing Monitoring Information**

1. All available information from prior inventories, monitoring data, climatic records, actual stocking records, utilization surveys, photographs, or other pertinent information shall be compiled, analyzed and summarized for the public lands portion of the ranching operation.
2. Additional data needs may be identified to meet management objectives, desired plant community objectives, and other considerations (such as water quality, endangered species, etc).

#### **C. Future Monitoring Attributes & Protocols**

1. Describe and agree upon the locations, timing, attributes to be measured, and protocols to be used for both annual event monitoring and periodic long-term resource-trend assessment.
2. Where available, Ecological Site Descriptions should be the basis for interpreting and extrapolating monitoring results and for conducting rangeland inventories.
3. Monitoring data shall include the measurement or assessment of indicators or attributes appropriate for evaluating the allotment management objectives, which may include ground cover, vegetative species composition, long-term trend transects, and repeat photographs. Additional monitoring data, such as actual use, utilization or residual measurement (stubble height), vegetation structure (height, pattern), age class distribution of plant species, vegetation production, erosion indicators, and other relevant indicators may be included as needed on a case-by-case basis.
4. Monitoring data should be collected in a manner that is repeatable and as quantitative as practical.





## Appendix L

### References

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